

MOTOR AGE

Vol. VII No. 10

CHICAGO, MARCH 9, 1905

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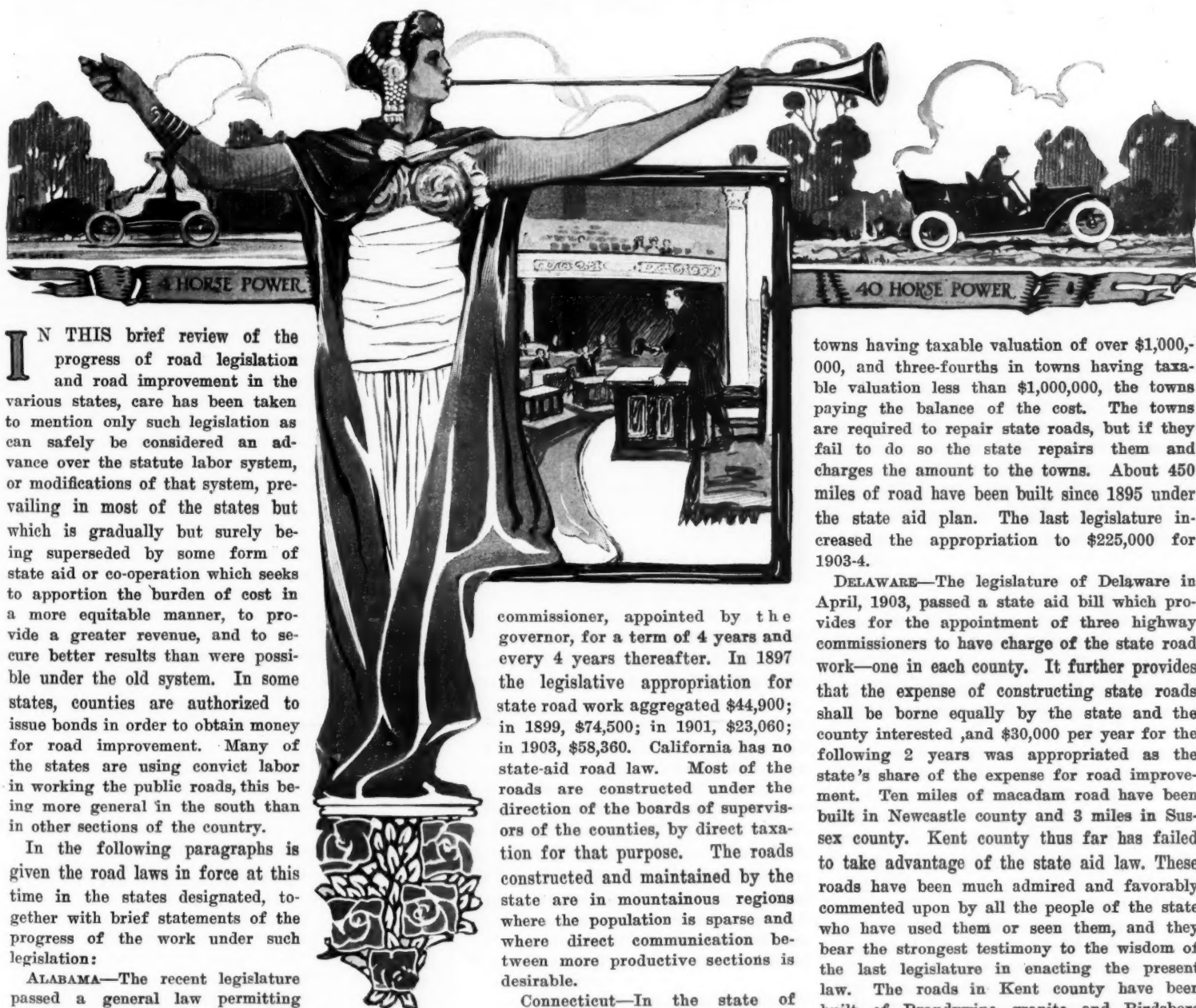
MOTOR AGE

VOL. VII. No. 10

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ROAD MAKING OF THE STATES



IN THIS brief review of the progress of road legislation and road improvement in the various states, care has been taken to mention only such legislation as can safely be considered an advance over the statute labor system, or modifications of that system, prevailing in most of the states but which is gradually but surely being superseded by some form of state aid or co-operation which seeks to apportion the burden of cost in a more equitable manner, to provide a greater revenue, and to secure better results than were possible under the old system. In some states, counties are authorized to issue bonds in order to obtain money for road improvement. Many of the states are using convict labor in working the public roads, this being more general in the south than in other sections of the country.

In the following paragraphs is given the road laws in force at this time in the states designated, together with brief statements of the progress of the work under such legislation:

ALABAMA—The recent legislature passed a general law permitting counties to vote at any time for a bond issue or a special levy for the roads.

CALIFORNIA—The legislature of 1895 created the state bureau of highways, with three commissioners, appointed by the governor, to hold office 2 years, and appropriated \$83,500 for carrying on state road work; in 1897, by legislative enactment, the bureau of highways was superseded by the state department of highways, with three commissioners to hold office for 2 years, they to be succeeded by one

commissioner, appointed by the governor, for a term of 4 years and every 4 years thereafter. In 1897 the legislative appropriation for state road work aggregated \$44,900; in 1899, \$74,500; in 1901, \$23,060; in 1903, \$58,360. California has no state-aid road law. Most of the roads are constructed under the direction of the boards of supervisors of the counties, by direct taxation for that purpose. The roads constructed and maintained by the state are in mountainous regions where the population is sparse and where direct communication between more productive sections is desirable.

Connecticut—In the state of Connecticut the legislature has appropriated for the building of state roads, from 1895 to 1902, the sum of \$1,233,000, and during the same period the counties have appropriated for the state road work \$810,942.55. In the building of state roads the state pays two-thirds of the cost in

towns having taxable valuation of over \$1,000,000, and three-fourths in towns having taxable valuation less than \$1,000,000, the towns paying the balance of the cost. The towns are required to repair state roads, but if they fail to do so the state repairs them and charges the amount to the towns. About 450 miles of road have been built since 1895 under the state aid plan. The last legislature increased the appropriation to \$225,000 for 1903-4.

DELAWARE—The legislature of Delaware in April, 1903, passed a state aid bill which provides for the appointment of three highway commissioners to have charge of the state road work—one in each county. It further provides that the expense of constructing state roads shall be borne equally by the state and the county interested, and \$30,000 per year for the following 2 years was appropriated as the state's share of the expense for road improvement. Ten miles of macadam road have been built in Newcastle county and 3 miles in Sussex county. Kent county thus far has failed to take advantage of the state aid law. These roads have been much admired and favorably commented upon by all the people of the state who have used them or seen them, and they bear the strongest testimony to the wisdom of the last legislature in enacting the present law. The roads in Kent county have been built of Brandywine granite and Birdsboro trap rock, at a cost of about \$6,000 per mile. The roads are built of macadam, 16 feet wide and 8 inches deep, with shoulders on either side extending to the full width of the road-bed, making a permanent highway about 35 to 40 feet in width. In Sussex county, where about 3 miles of macadam road have been built at about the same cost per mile, the roads have proven to be equally satisfactory, and the people are already beginning to

EDITOR'S NOTE—This article is a compilation by W. O. Eldridge, assistant director, office of Public Road Inquiries, Washington, and forms a part of the report of the Illinois Good Roads Commission to the legislature now assembled.



clamor for more roads. In the beginning the strongest opponents to this law were the farmers, but since they have seen the advantages of these roads, especially for themselves, many of the most intelligent farmers have become the strongest advocates of the principles of road building as embodied in the state aid law.

FLORIDA—A recent act of the legislature sets aside for the improvement of roads the proceeds of the Indian war claims, the payment of which has been authorized by congress. From this the state will realize over half a million dollars. Another act, adopted June, 1903, provides that all moneys now in the internal-improvement fund, or which may be derived from the sale of state swamp or overflowed lands, shall be devoted to the construction of hard roads, being divided among the several counties in proportion to their assessed valuation. Under act of the legislature approved June 3, 1899, all persons confined in county jails for a term of 1 year or less shall be worked on the public roads.

ILLINOIS—The legislature of Illinois at its last session enacted a law providing for the appointment of a good-roads commission, consisting of three persons, one of whom shall be a civil engineer familiar with the problems of highway construction, another to be one who has had experience as a commissioner of highways in the state of Illinois, and the third to be a business man of high standing. In compliance with the terms of the law, Ex-governor Yates appointed H. V. Wallace, of Chicago, chief of the engineering department of the Illinois Central railroad; E. A. Mitchell, a prominent business man of Chillicothe, and D. W. Smith, of Springfield. The commission is now engaged in the work laid out for it by the legislature. Among other things, it is making a survey of the present wagon roads of the state. It is also endeavoring, with good prospects of success, to secure from the railroads of the state very low rates of transportation on material to be used in the construction of wagon roads. It has also taken up with the authorities of the northern and southern Illinois penitentiaries the question of securing an abundant supply of crushed stone, to be distributed by rail to the various sections of the state. There is observable already a gratifying change in public sentiment throughout Illinois upon the subject of improved roads. Many local good roads associations are being formed, and the people in many localities are now actively engaged in building good roads at local expense. The investigations so far conducted by the Illinois good roads commission indicate that the cost and difficulties of the construction of good roads in Illinois have been very largely overestimated and that when these questions come to be properly understood by the people the

roads of Illinois will be in a very few years compare favorably with those of any state in the union.

IOWA—An act approved April 13, 1904, was adopted by the general assembly providing for the appointment of a state highway commission. The Iowa State college, at Ames, is to act as such commission. The duties of the commission shall be to devise and adopt plans and systems of highway construction and maintenance, disseminate practical information on road construction and assist in building object lesson roads.

MAINE—Legislation was enacted in 1901 providing that any city or town may receive from the state treasury one-half the sum actually appropriated for a state road within the corporate limits of such city or town; but the sum to be appropriated from the state shall in no case exceed \$200. Nearly all the towns appropriated this year \$400, thus becoming able to draw from the treasury the maximum amount. As an experiment, the state at first made the maximum amount \$100, but after a trial of the law for 2 years the legislature increased the maximum.

MARYLAND—The Maryland highway division of the state geological survey was established by the general assembly in 1898 for the purpose of investigating the conditions of the roads in the state and the best methods of improving the same. Since 1898 \$10,000 has been appropriated each year for carrying on the work of this division. A most careful and searching inquiry into the road question of the state has been made and several exhaustive reports issued. The highway division reports, among other things, that there are 16,000 miles of roads in the state, of which 497 miles are toll roads. There are about 900 miles of stone, shell and gravel roads maintained by the counties. It is estimated that the counties spend for road maintenance \$600,000 annually, and that the people of the state pay about \$140,000 annually in tolls. It is estimated that the average hauling distance is 6.7 miles and that the average amount hauled in tons per horse is 0.58 ton. The average cost of hauling 1 ton per mile in Maryland is 26 cents. The cost of properly built macadam roads in Maryland, graded for a width of 20 feet with macadam 12 feet wide, varies from \$4,000 to \$6,000 per mile. The general assembly of 1904 passed an act which provides state aid for the construction of modern macadam roads to the extent of \$200,000 annually, one-half the cost of the roads constructed under the law to be paid by the state. The amount received by each county is the direct proportion the public road mileage of the county bears to the total public road mileage of the state.

MASSACHUSETTS—Massachusetts appropriates annually \$490,000 as state aid. The state

pays the entire cost of the road, but 25 per cent of the cost is assessed on the counties. The state has appropriated for the building of roads an aggregate of \$4,940,000. The Massachusetts highway commission, which was established in 1894, has received some contributions from counties, towns and individuals to assist in building roads which amounts to \$210,923, making a sum total of \$5,150,923. The recent legislature appropriated \$2,250,000 to be expended for state highways during the next five years. The average cost per mile of 12 to 15 foot stone roads in Massachusetts in 1904 is \$6,200, the depth varying from 3 to 12 inches. Gravel roads 15 feet wide and six to eight inches deep, cost from \$3,000 to \$4,000 per mile. Five hundred and four miles were built or under contract up to January 1, 1904. It is estimated by the Massachusetts highway commission that there are 20,000 miles of roads in the state and that 1,900 miles will ultimately be improved by state aid.

MICHIGAN—Every township has the right to raise money by bonding to the extent of 5 per cent of its valuation to build gravel, stone or any other kind of roads or to construct bridges. Any county may adopt the county road law and assess a 2-mill tax each year to build good roads. County commissioners are elected who hold office twice the number of years that there are commissioners elected, which cannot be more than five, usually three. The state highway department act provides that every road or street official in the state shall make annual reports to the state highway department, and every such official has the right to seek from said department information about material or how best to build roads or bridges.

NEBRASKA—The legislature of Nebraska recently passed a bill providing for co-operation with the federal government whenever national aid to road construction shall be undertaken.

NEW HAMPSHIRE—The legislature of New Hampshire passed a bill providing for the appointment of a state engineer, who shall prepare a highway map of the state and plan a system of continuous main highways which shall include every town in the state, \$15,000 being appropriated for the purpose. It also provides in the bill that the governor and council shall prepare for the general assembly a bill, which will provide fully for the inauguration of a system of state work and of state expenditure in the future construction and repair of highways. The assembly is at present in session.

NEW JERSEY—The state aid law of New Jersey was adopted in 1891 and became operative in 1892. In 1895 a new and more comprehensive law was enacted, under which one-third of the expense of building the state roads was borne by the state, 10 per cent by the individuals along the line of the road to

be improved and the balance by the county in which the road was located. In 1903 a new law was enacted. This law permits an increase of the state appropriation to \$400,000 and gives the counties the right to assess upon their ratables for road purposes to the extent of one-half of 1 per cent, exclusive of the state appropriation. It allows the townships to pay 10 per cent of the cost instead of the property holders along the line. Under the law of 1903, 65 miles have been built and several hundred miles projected. The total number of miles built by the state up to July 1, 1904, was 1,100 at a cost to the state of \$1,515,168.55, and at a cost to the state, counties and townships of \$4,930,000. The state appropriates \$250,000 per annum as state aid.

NEW YORK—The state aid laws of New York, approved March 24, 1898, and which have been amended in many instances, are the Higbie-Armstrong and the Fuller-Plank acts. The Higbie-Armstrong act was enacted for the purpose of permanently improving the main traveled roads of the state, leading to or connecting the principal centers of population and known as first-class roads. The law provides that the state shall pay 50 per cent, the counties 35 per cent, and the towns or abutting property owners 15 per cent of the cost of construction in accordance with plans and specifications prepared by the state engineer and surveyor. The Fuller-Plank act provides state aid to the towns which by vote have adopted the money system for the improvement, repair and maintenance of the public highways known as second-class roads, or those acting as feeders to the main traveled roads. Under this law the state aid is 50 per cent of the amount levied in each town, which amount is limited to one-tenth of 1 per cent of the assessed valuation of the towns, excepting those which have assessed valuation of less than \$1,000,000. There are 74,097 miles of public highways in the state of New York. Up to July 1, 1904, nearly 700 miles of road were constructed or in process of construction in accordance with the provisions of the Higbie-Armstrong act. There are 30,893 miles in various towns of the counties of the state laws for the year 1904 is \$3,524,480.19. Under the Higbie-Armstrong act the appropriations by the state and counties for the years 1899 to 1904, inclusive, were \$8,662,094.15. Under the Fuller-Plank act the appropriations by the state and towns for the years 1899 to 1904, inclusive, were \$3,045,573.09, making a grand total of \$11,707,667.24 appropriated by the state, the counties, and the towns for the improvement, repair and maintenance of public highways within the state. The total amount of money available from state and counties for the year 1904 for the construction of roads under the Higbie-Armstrong act was \$2,213,014.30. The total amount of money available from state, counties and towns for the year

1904 for the improvement, repair and maintenance of public highways in the state under the Fuller-Plank act was \$1,311,365.89. The total amount of money available under both laws for the year 1904 was \$3,524,480.19. Under the Higbie-Armstrong act there are now on file in the office of the state engineer and surveyor petitions from the various counties of the state for nearly 4,500 miles of road. The legislature of the state has passed once a constitutional amendment which provides that the state may bond itself for \$50,000,000, \$5,000,000 of which is to be available each year for 10 years, for the improvement of the public roads. This amendment must be passed by the next legislature and then submitted to the popular vote before it becomes effective.

NORTH CAROLINA—North Carolina has a highway commission, established 3 years ago. The commission is composed of the state commissioner of agriculture, the state geologist, and the state secretary of agriculture. Its duty is to collect and disseminate information and to report to the legislature.

NEW MEXICO—In 1893 the legislature appropriated \$5,000 to pay other additional expenses which would be incurred in the use of convict labor upon the construction of a road between Sante Fe and Las Vegas, New Mexico. This road will run through some very rough mountain country almost through its entire length. There is available about 9 miles of good road at the Santa Fe end, and since the spring of 1903 work has been pushed in an endeavor to extend the road already available across the remaining distance, a total of about 40 miles. There has been completed on the Sante Fe end about 6 miles of this new road, and on the Las Vegas end about 4 miles of the new road.

OHIO—The last general assembly enacted legislation providing for a state highway department for the purpose of instructing, assisting and co-operating in the building and improvement of public roads, making investigations and experiments in best methods of road building, best materials, etc., and publishing literature on the subject of road improvement. It also provided for state aid in the construction and improvement of roads under the provisions of the act mentioned as follows: One-fourth to be paid by the state and three-fourths to be a county charge, but one-third of said three-fourths to be paid by the township. In apportioning the 25 per cent to be paid by the township, 10 per cent shall be a charge upon the whole township and 15 per cent a charge upon the abutting property.

PENNSYLVANIA—The legislature of 1903 adopted a state aid law, which was approved April 15, 1903, creating a state highway department under the direction of a state highway commissioner, and providing that two-thirds of the cost of rebuilding roads is to be borne by the state, one-sixth by the county,

and one-sixth by the township. A total appropriation of \$6,500,000 was made, distributed as follows: Five hundred thousand dollars for each of the first 2 years, \$1,250,000 for each of the next 2 years, and \$1,500,000 for each of the next 2 years. Of the foregoing amounts, one-tenth is for the maintenance of improved roads, constructed under the law of 1903, or roads previously built which conform to the state standard. Such aid in maintenance must not exceed one-half of the total expense. That part of the appropriation used for construction purposes is apportioned among the several counties in proportion to their mileage of public roads. About 125 petitions for state aid were on file July 1, 1904.

RHODE ISLAND—The last legislature passed a resolution appropriating \$100,000 for the construction and maintenance of highways under the direction of the state board of public roads, which was created by the preceding legislature. Out of 2,240 miles of highway in Rhode Island about 500 miles have been improved by the use of gravel and stone.

SOUTH CAROLINA—In South Carolina an act was passed authorizing the county commissioners of any county to hold elections to decide upon bonding the county for the permanent improvement of the highways to an amount not to exceed \$200,000 or 8 per cent of the assessed valuation of that county, the fund so raised to be expended under the direction of said commissioners. Another act was passed permitting counties to work convicts with 5-year sentences in chain gang. Hitherto the counties have not been permitted to work convicts whose terms of sentence exceed 5 years.

VERMONT—The Vermont plan for state aid for highway improvement assesses annually a state tax of 5 mills on the dollar, to which is added the revenues from the local-option license law. The fund for the year 1904 was \$130,811.35. This was apportioned to all the towns in the state, proportional to mileage of roads in each town. The state commissioner furnishes specifications for work involving the expenditure of moneys appropriated by the state, and has supervision of the work, which must be done to his satisfaction by the town road commissioners before payment is made to towns. The specifications provide for drainage, telford foundation wherever artificial foundation is needed, surfacing with good road material, and properly finishing the road. All culverts are to be substantially built of stone or vitrified tile. The work is laid out in rebuilding in permanent form the poorest sections of the main roads, and the location is selected each year by the selectmen and road commissioner of the towns. In 1903, 93 miles of road were built, 28 miles of which had telford foundation; also 1068 culverts. For maintenance towns annually assess a money tax of 20 per cent on a grand list—the basis being 1 per cent of the valuation.





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HANGS IN THE BALANCE

AN UNDERCURRENT of confidence seems to exist among those interested in racing matters that with the meeting of the racing board of the American Automobile Association this week and the announcement thereof of the name of the new chairman, will come a new and common sense administration of this branch of the functions assumed by the A. A. A. There is also a general disposition among the critics of the association and board to hold their tongues and pens until the new chairman and administration have been given a chance to show their willingness and ability, not only as racing managers, but also as diplomats and peacemakers in the various entanglements arising from the Ormond fiasco, the ill-advised and somewhat unsavory alliance of the former racing board with the incompetent Daytona contingent of the Florida club, and the practical freezing out of Senator Morgan from active participation in the conduct of the meet.

It looks now as though H. L. Bowden was to be the chairman. He visited New York last week and conferred with the powers behind the throne with the result, it is credibly reported, of his consent to accept the office. None but good words are heard of Bowden, who is regarded as a strong man, having the esteem of the members of all the warring factions. To be sure, there has been criticism that both the A. A. A. presidency and the racing board chairmanship will then be centered in New England in face of the fact that the A. A. A.'s most influential club has its home in New York, and that the very large bulk of the racing is around New York and in the middle west as contrasted with comparatively little race promoting in New England. The suggestion that the racing board have a secretary of experience to conduct the routine business of the board meets with universal favor. The feeling here is that if the board secretaryship be given to New York it will answer the New England centralization criticism and assure an official at hand where the most of the racing seems likely to occur. Alfred Reeves has been mentioned for the office and his name has been favorably received. Mr. Reeves, however, has the Empire City track on his hands and other irons in the fire and does not think it practicable to take the secretaryship. The advisers have, accordingly, been compelled to look elsewhere. J. C. Kerrison, of Boston, has been mentioned with favor; but the powers that be do not seem to think it advisable to have a newspaper man in the office and Kerrison is naturally not inclined to quit his positions on the Bos-

ton Herald and MOTOR AGE to make himself eligible. In the midst of all the fluttering in the air of the dove of peace and the general disposition to call a halt on all racing quarrels until after the meeting of the board this week, the appointment of a new chairman, and a possible pacificatory policy, Secretary Gillette "butts in" with the following statement to the press:

In connection with the action of the racing board of the American Automobile Association in granting a reservation of date to the Florida East Coast Automobile Association for a meet next year, there has been some criticism and several statements to the effect that this reservation was granted for the sole reason that the Florida East Coast Automobile Association is a member of the American Automobile Association. In justice to all concerned, it seems to me that publicity should be given to the following explanation:

The racing board at a recent meeting had before it two applications for sanction for a week's racing on the Ormond-Daytona beach for conflicting dates. In rendering a decision, the board considered three points, almost the least of which was the fact that the Florida East Coast Automobile Association was a member of the A. A. A.

First—The application for sanction from the F. E. C. A. A. was the first received, and as such was entitled to first consideration.

Second—The F. E. C. A. A. was the older organization, and although some criticism had attached to the conduct of this year's meet, it nevertheless was entitled to consideration as being an association composed of individual sportsmen interested in the success of the meet in Florida to the extent of putting up a club house, erecting suitable stands for the accommodation of officials and spectators, surveying the course and in numberless other ways showing a sportsmanlike interest rather than a mercenary one in the success of the meet.

Third—The F. E. C. A. A. for nearly 3 years had been a loyal member and supporter of the A. A. A., and as such was entitled to consideration.

I submit the above simply as showing that there were three considerations instead of one that led the racing board to grant a reservation of date to the F. E. C. A. A. Any one of the three would warrant the board in granting a reservation, particularly as such a reservation need not necessarily mean a refusal of a reservation to the Ormond Racing Asso-

ciation. The F. E. C. A. A. has simply been given precedence and no action whatever has been taken regarding the application of the other organization. No injustice has been done either to the F. E. C. A. A. or the Ormond Racing Association, and none will be done.

Gillette's use of "I" and the considerable time that has elapsed since the last meeting of the A. A. A. directors and racing board, lead to the conclusion that possibly the ill-advised statement was sent out on his personal responsibility.

It will be noted that Gillette declares that a blanket reservation covering a month was given the Daytona club. This differs from the statement of a racing board official who was at the meeting that both applications had been laid on the table, which would have been a wise act pending the promised unraveling of the racing situation. This granting of a blanket reservation is unprecedented in view of there being two applications and no dispute of the financial ability and competence of the one discriminated against to run a successful and satisfactory meet.

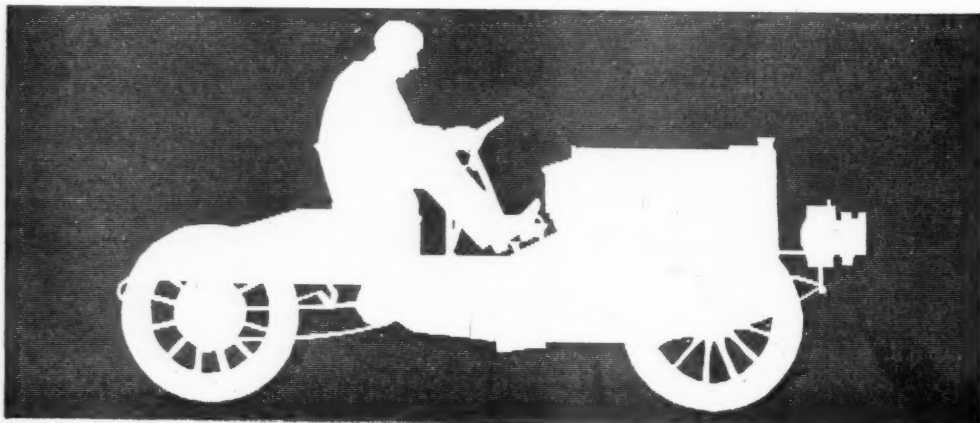
In reply to Gillette's reasons it is possible that there may be proof offered that the application of the Ormond Racing Association duly accompanied by sanction fee was the first to be made, and that the Daytona club woke up and made application later, after it learned what had been done and that the Ormond club meant business.

The "sportsmanlike rather than mercenary interest" of the Daytona club may not be altogether unselfish in view of the fact that it is or was heavily in debt for its club house, that the entry fees amount to over \$5,000, and that most of the expenses and prizes are contributed, the former by Mr. Flagler and the latter largely by the Ormond end of the beach.

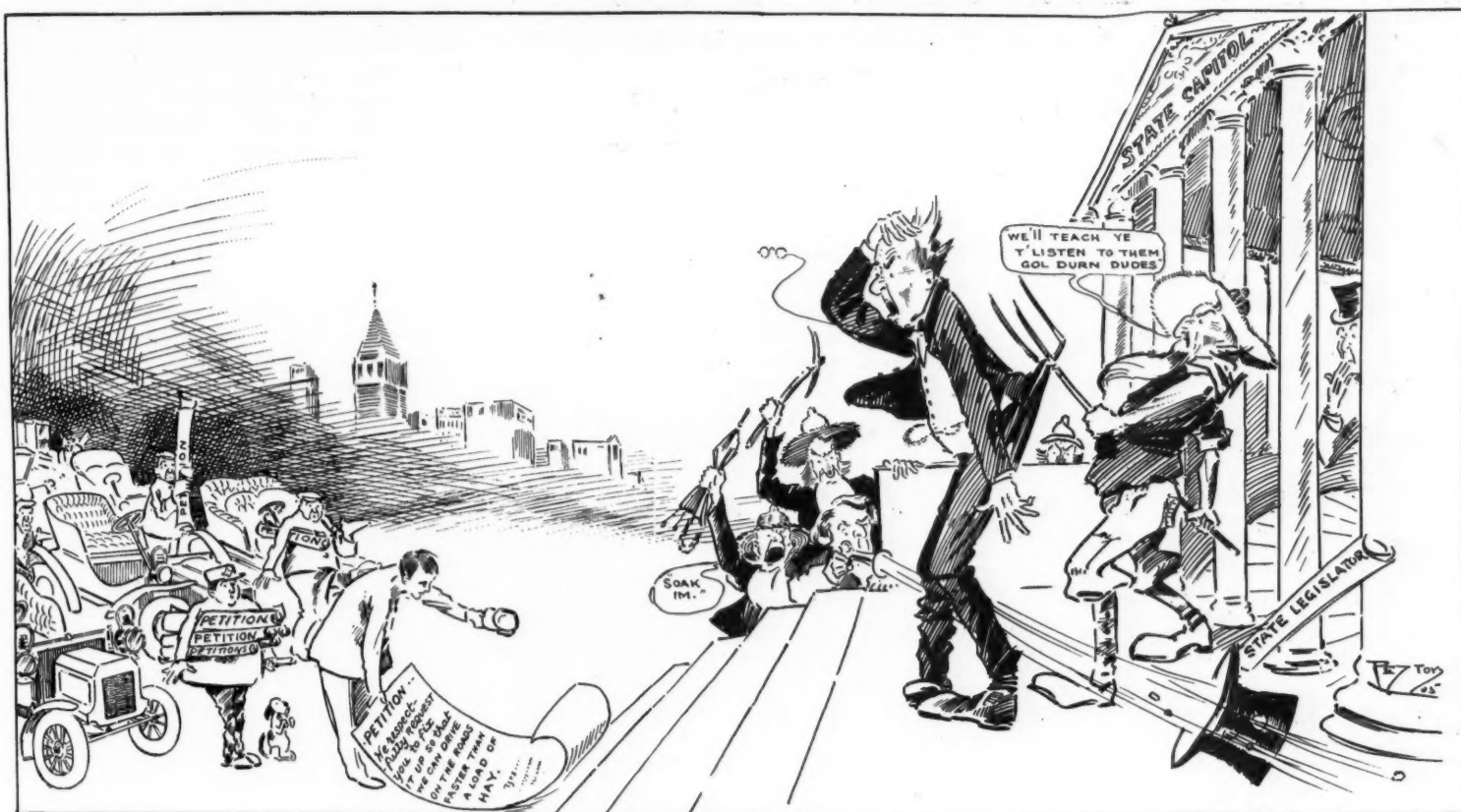
Morgan, without whom the tournaments would never have been and it seems cannot be satisfactorily conducted, and his friends were loyal to the A. A. A. until its board practically took what he gave and turned him down in return and formed an unsavory alliance with his avowed enemies, which resulted in the meet's proving an unnecessary fiasco from a managerial standpoint.

Gillette might better have kept his mouth shut and his pen dry pending the action of the new board, which everybody stood ready to await in the hope that a new policy would save the racing situation and unravel the unfortunate Ormond-Daytona tangle. His silence or the silence of his possible instructors would have, to say the least, made matters easier of adjustment.

Still the situation in so far as it refers to racing is not without hope and at least it would not be much worse than it has been since the Florida tournament.



Jump Sparks



A SEASONABLE SCENE

Senator Morgan sinks like a cork.

John D. Rockefeller is an enthusiastic automobilist, but what people would like to know is how much he pays for gasoline.

When it comes to breaking forth at the wrong time with an "explanation" of things concerning which some other people know more than he does, you can't beat Secretary Gillette, of the A. A. A.

Note this from the Republican, of Fresno, Cal.: "Automobiling is daily growing in favor among our 'first families' and it is with considerable pride that we boast of the fine machines owned by different ones of our prominent auto enthusiasts."

There was a \$10,000 fire in Madison Square garden the other night. Wouldn't it be a swell joke on the A. L. A. M. if the garden should burn down and in the meantime the A. M. C. M. A. should get an option on the next best show building in New York!

According to the following paragraph from an English automobile paper the chauffeur situation in America is almost on a par with the servant girl problem: "Three hundred chauffeurs in Chicago have struck. They belong to the Amalgamated Union of Independent Automobile Directors, which has formulated certain interesting demands. They ask that their hours be eight a day and no more and that after hours they be given the free use of their employers' motor cars for themselves and friends. The employers want to limit the free use of the cars to the chauffeurs to 2 days a week, but they refuse to accept this and there is a deadlock."

Two Detroiters are starting a new automobile paper. This is where two Detroiters gain a lot of valuable experience quickly.

The way the A. L. A. M. and the A. M. C. M. A. refer to each other reminds one of a newspaper conversation between a couple of prize fighters.

There will be over 300 exhibitors at the Boston show. The automobile paper men can thank their lucky stars that this show comes after the New York and Chicago shows, and not before.



THE BUSY LEGISLATORS

And now the busy legislators,
Agitators,
Incubators,
Hatching grand ideas with a great imagination,
Have tackled the suggestion—
The most momentous question
Of reasonable, seasonable auto legislation.

They have tackled matrimony,
Patrimony,
Fratrimony,
Possibly some other "moneys"
sometimes with cupidity.
And now 'tis their intention
To proffer their attention
To the automobile question, which
they've tackled with avidity.

Oh, well, there's some a-thundering,
Some blundering,
Some wondering,
And here and there a man whose
bright ideas fairly crackle—
But come now, quitcher kickin';
Just let him hatch his chicken
Ten to one that all that comes of
It will only be a cackle.
R. O. EASTMAN

Secretary Gillette floats like a rock.

State legislators seem to be more afraid of their rural constituency than of the automobiles they are trying to regulate.

If you live in a state whose legislature is now considering automobile regulation, why don't you write to your representative requesting that his influence be exerted to secure a national measure.

Barney Oldfield says he made \$10,000 last year in track racing and that he does not intend to give it up. It is a cinch he will not give up the money, so probably he meant that he would not give up racing.

If it would take 300 or 400 popular-priced American cars to wake up the sleeping inhabitants of Hamburg, Germany, as a correspondent suggests, how many European cars would it require to do the job?

French automobile papers refer to the little Ross steamer which made so many remarkable runs during the Ormond tournament as the "White steamer de Ross." This is a case where it is hard to tell who gets the worst of it.

In the manufacture of automobiles there is antagonism between two national associations of makers; in automobilism there is antagonism between two national associations of automobilists; in the promotion of the annual Florida tournament there is antagonism between two associations of promoters. The game certainly furnishes excellent opportunity for W. J. Bryan or any other politician for whom there is not much doing in his regular line.

CONGESTED EXHIBITION

Buffalo's Local Show Crowded with Exhibits and Jammed with Visitors—Profitable Business Expected Later in the Week—Entertainment of the Show Circuit Chasers

Buffalo, N. Y., March 6—"Good old Buffalo," cried the tradesmen tonight when they saw a crowd numbered by thousands pouring into the City Convention hall for the opening of the third Buffalo automobile show. They all agreed that they could rely upon Buffalo to produce a crowd for a motor exhibit.

The crowd certainly was large. Complimentary tickets had something to do with it on the first night, but Manager D. H. Lewis assured the MOTOR AGE man that the paid admissions were larger by far than on the first night last year. The hall was packed from the minute the sound of many horns announced the opening until 11 o'clock, when an almost equal volume of noise politely said to the visitors: "Here's your hat; what's your hurry?"

Time was when a visit to an automobile show in Buffalo was something like going to an art gallery—plenty of room to wander about in, and lots of time to spend looking at something you liked. But not so tonight. One could not stand still if he would to admire the lines of any particular car, for the surging crowd filled all the aisles and not even in the exhibit spaces themselves was one free from jostling.

It is a bit difficult to estimate the business possibilities of that crowd. Some dealers held up their hands when asked, and said: "It's too crowded to do anything." Others, however, found that part of the throng, at least, was ready and anxious to talk business and among all of the exhibitors there is a distinct feeling this evening that later in the week when the attendance is somewhat smaller the volume of sales will exceed those of some of the other local shows this year.

No previous show in this city has been half so attractive as this. The decorations are simple but there are twice as many big electric signs this year as last and many of the booths at the sides of the hall are more attractively decorated. Every available space is filled, even to the two large ante-rooms on the south end of the hall, and more could have been sold if it had been there to sell. The hall has only a small gallery, unfit for exhibition purposes, and the amount of space at the disposal of Manager Lewis this year just about marks the limit of possibilities in that direction for Buffalo shows.

Quite frequently the statement that a show was all complete on the opening night is taken with a lot of salt; but in this case it is almost literally true. Some part of every exhibit was in place at 8 o'clock this evening. The Mitchell cars had not arrived and a sign in the J. A. Cramer exhibit announced that these machines probably would be here tomorrow. In every other instance the machines intended to be displayed were in place and the only part of the show which was not in final condition was the electric signs, some of which had not yet been wired.

It is notable that the lines of cars represented by Buffalo tradesmen are being enlarged. The Centaur Motor Co., which is one of the leading sellers of Packard cars in the

country, has in addition the Franklin, Cadillac, Columbia, Peerless and Yale. The W. C. Jaynes Automobile Co. is showing the Oldsmobile, Winton, Buick, Pope-Toledo, Pope-Tribune and Pope-Hartford. J. A. Cramer has another large line, including the Ford, Marion, Premier and Mitchell, while the Poppenberg Automobile Co. has the Rambler, National, Queen and Marion. The Wayne, Prescott, Knox, Stevens-Duryea, Jackson, Waverley electric, Buffalo Stanhope, Autocar, St. Louis, Reo, Haynes-Apperson, Northern, Reliance, Maxwell, Twyford and Duquesne are the other cars shown. Not finding space which was to its liking the White Sewing Machine Co., through its Buffalo agent, Walter Hayes, is conducting its own show in its new store on Main street.

Whereas last year not a single tire manufacturer was represented at the show, space is filled this year by the Goodrich, Diamond, Fisk and Goodyear companies, while Continental tires are shown by Ephraim Bros. Big exhibits of accessories are made by the Centaur Motor Co., Ephraim Bros. and the O. K. Machine Works, while Solar and Gray & Davis lamps are in their own exhibition spaces.

The only car of the lot which has not been described heretofore is the Twyford, built at Brookfield, Pa., one novel point of which is the driving to each of the four wheels.

Perhaps an exception to the statement that all cars which were expected are here except the Mitchell, should be made in the case of the Duquesne Construction Co.'s machines. On the stage, one of the best spaces in the whole building, the only car offered to the public gaze is the same Duquesne which attracted attention last year because of its tilting front seat as a sort of side entrance. The plans of the Duquesne company have been greatly hampered, it seems, by reason of delays in transportation of supplies incident to the severe snow blockades in western New York this winter, and it was impossible to prepare the 1905 model in time to send it to the show. The old car has been dubbed the 10,000-mile Duquesne by Leroy Pelletier, who is in charge of the exhibit.

As to the character of the business which is to be done this year at the show there seems to be a general impression that more big cars will be sold. This would be following, perhaps, the same trend as in other cities, but in some ways it will be more of an innovation here because Buffalo, while it is a good motoring town, seems to be rather fond of small cars, capable of good service on the fine asphalt pavements and smooth roads of the surrounding districts. It is felt, however, that a change is coming. The George N. Pierce Co. has sold more large cars thus far this season than it did all last year in this city. The E. R. Thomas Motor Co. is having the same experience, for last year the Thomas was not pushed at all in Buffalo. But it is not alone the local manufacturers who expect a larger demand for high-powered, roomy cars this year. The out-of-town sales agents and representatives here declare that

Buffalo will purchase more big automobiles.

An innovation will probably be employed during the week in doing this business. If possible the dealers are to curtail the amount of work usually done by the demonstrating cars. As a matter of fact the convention hall is badly situated from the viewpoint of the demonstrator. Elmwood avenue and Virginia street, at the junction of which is the hall, are narrow and each carries car tracks, the cars turning from Elmwood into Virginia at this point. To the inconvenience caused by the frequency of the passing of trolley cars is added this week the bad condition of the streets. Buffalo's city government seems to have run shy of money at a critical time for practically nothing has been done toward clearing the streets of the business section since a series of daily thaws and nightly freezes turned the snow in the streets into sheets of ice.

"We are going to try to minimize this demonstration business as much as possible during the show," said one dealer tonight, speaking of the action of a number of the tradesmen taken in concert. "Of course," he continued, "people who wish to take trips in cars before buying will be permitted to do so, but our company will not maintain a demonstration car outside the hall."

Quite a number of out-of-town tradesmen are here to assist the local firms in the proper presentation of the merits of their cars. Messrs. Kulick and Mead are here from the Ford factory; Will Densmore from the Packard Motor Car Co.; Fred Brant from the Electric Vehicle Co.; Louis Sackett, of the Peerless forces; H. C. Tillotson, representing the Yale; H. M. Dunbar, of the Franklin company; Sales Manager Metzger and W. E. Foltz from the Cadillac headquarters; Otto Nestman, of the J. Stevens Arms & Tool Co., and Charlie Hall, of the Badger Brass Mfg. Co.

All of these men are looking forward to the banquet which is to be held on Thursday evening in one of the large rooms on the second floor of the hall. No name has been given as yet to the new order which, it is taken for granted, will be started at that time nor has it been decided which part of the apparel of the guests will be demanded as initiation fee. It is taken for granted, however, that mufflers will be open and brakes dispensed with at that time and that "gasoline" will be plentiful. Conspicuously posted on the wall of the cafe upstairs in the hall is a sign reading: "No Rough House." Everyone was too busy this evening to more than smile as it had an ominous look and those who had suffered elsewhere were wondering what new form of torture the Buffalo crowd was to institute.

One thing to which many of the visitors will be forced, undoubtedly, will be to join the Automobile Club of Buffalo while they are here. Last year Fred Wagner, who was one of the managers of the show, roped in a lot of members during the week, and President A. H. Knoll, of the club, started the ball rolling tonight. He had quite a little bunch of applications before 11 o'clock. The club members are also hard at work booming the attendance, for their organization is to pocket the gate receipts as its share of the profits of the exhibition. President Hotchkiss, of the New York State Automobile Association, was on hand tonight and later in the week the directors of the association will be here to hold their annual meeting. They will be guests of the automobile club governors at the ban-

quet to be given on Thursday evening.

Tonight's crowd acted much as show crowds always do. Many seemed to make it a point to sit in as many tonneaux as possible, while others devoted themselves to the collecting of catalogues to be thrown on the floor or on the sidewalk outside. There seemed no lessening of the disagreeable habit of women to occupy comfortable cars and remain there oblivious to the evident desire of the exhibitors to point out the distinctive features of the machines to prospective buyers.

EXHIBITORS AT BUFFALO

Duquesne Construction Co., Jamestown, N. Y.
Knox Automobile Co., Springfield, Mass.
E. E. Denniston, Buffalo; tops.
Poppenberg Automobile Co., Buffalo; Rambler, Queen, Marion and National cars.
National Battery Co., Buffalo; batteries.
Fisk Rubber Co., Buffalo branch; tires.
O. K. Machine Works, Buffalo; accessories.
Hartford Rubber Works Co., Buffalo branch.
Badger Brass Mfg. Co., Kenosha, Wis.; lamps.
Goodyear Tire & Rubber Co., Buffalo branch.
P. W. Elgner, Buffalo; Waverley electrics.
E. R. Thomas Motor Co., Buffalo; Thomas.
Buffalo Electric Carriage Co.; electric cars.
C. W. Roe, Buffalo; Autocar.
George N. Pierce Co., Buffalo; Pierce cars.
W. C. Jaynes Automobile Co., Buffalo; Winton, Oldsmobile, Pope-Toledo, Pope-Hartford, Pope-Tribune and Buick cars.
Meadows & Hafer, Buffalo; St. Louis and Reo cars.
Buffalo Automobile Exchange, J. J. Gibson, Buffalo; Haynes-Apperson and Northern cars.
Brunn Carriage Co., Buffalo; Stevens-Duryea.
J. A. Cramer, Buffalo; Ford, Mitchell, Marion and Premier cars.
Centaur Motor Co., Buffalo; Packard, Franklin, Columbia, Peerless, Cadillac and Yale.
Wayne Automobile Co., W. U. Watson, Agent.
Buffalo Gasoline Motor Co.; motors.
Diamond Rubber Co., Buffalo branch; tires.
Ephraim Bros., Buffalo; accessories, Continental tires.
Gray & Davis, Amesbury, Mass.; lamps.
Goodrich Rubber Co., Buffalo branch; tires.
Jackson Automobile Co., Jackson, Mich.
Rose Mfg. Co., Philadelphia, Pa.; lamps.
Standard Oil Co.; oils.
Twiford Motor Car Co., Brookville, Pa.
Jos. Strauss & Sons, Buffalo; tires.
F. A. Ballou, Buffalo; motor boats.
Hartford Suspension Co., New York; Hartford-Truffault suspension.
Auto Storage & Repair Co., Buffalo; Maxwell.
Hill Mfg. Co., Buffalo; tops.
A. S. Noonan, Rome, N. Y.; muffler cut out.
Star Automobile Co., Buffalo; Reliance cars.
Prescott Automobile Co., New York; Prescott steamers.

BUSINESS TRANSACTED

Buffalo, N. Y., March 8—Special Telegram—Numerous Sold signs which have appeared in Convention hall since Monday night prove that the expectation of the tradesmen were good. Business is being realized. On Tuesday and today the afternoon crowds have been large, many of the same persons coming each day, showing that they are interested. So far as can be judged at this time the demand in Buffalo is turning more and more toward the larger cars. The show is attracting considerable crowds from other western cities and today Will Hyslop, the erstwhile Canadian bicycle crack, led an excursion of 150 from Toronto. All the Buffalo people connected with the show are pleased with the success of the exhibit, while the out-of-town men expressed the same view. Tomorrow night the whole crowd will have a glorious time at the banquet, if a big attendance and lots of enthusiasm will bring it about. Despite the effort to curtail the amount of demonstration work several scores of cars are busy in the streets about the hall and the drivers are having a thoroughly bad time of it on rough streets.

DEATH OF F. A. La ROCHE

New York Tradesman and Automobile Enthusiast Succumbs to Cancer of the Stomach

New York, N. Y., March 4—Frederic A. La Roche died at the Presbyterian hospital at an early hour this morning of cancer of the stomach. Mr. La Roche had been confined in the hospital for about 6 weeks. He had expected to be at the Ormond tournament and drive for President Steek, of the Florida East Coast Automobile Association, the 80-horsepower Darracq the latter had imported especially for that tournament. It was a bitter disappointment to Mr. La Roche that his illness prevented his carrying out an ambition so dear to his heart. He was not aware at first that his malady was so serious and ordered the car to be made ready and shipped, declaring he would get up and go to Ormond to drive it. The car met with an accident and was not a competitor.



FREDERIC A. LA ROCHE

Mr. La Roche had taken part in the previous year's tournament and scored a mile in his 40-horsepower Darracq in 48½ seconds.

Mr. La Roche had for 3 years been an enthusiast on track and straightaway racing and non-stop endurance contests. During the racing season of 1903 he was a competitor at most of the circuit meets both east and west. His victory over the Decauville and Gray Wolf at Providence that year was the outcome of the closest and hardest fought all-around struggle in the history of American track racing. His circuit chasing that season netted him successes in many of his races.

Last summer Mr. La Roche devoted himself and his Darracq with determination and enthusiasm to non-stop road record trials. A non-stop run to Boston and back was followed by a far more ambitious endeavor, which netted him the world's long distance non-stop record. Starting on July 25 from this city he made a run to St. Louis by way of Buffalo and Chicago and returned by way of Pittsburgh and Philadelphia, covering 3450 miles without stopping the engine of his 15-horsepower Darracq, in 15 days 2 hours.

Mr. La Roche founded the American Darracq Automobile Co. and was at the head of

the F. A. La Roche Co., which controlled it. His claim was that his company's importation of Darracqs exceeded that of any other foreign make. Mr. La Roche had branch houses in Washington and Philadelphia. Business will be continued under the corporate title. Mr. La Roche was inventor of several electric appliances and was president of the F. A. La Roche Electric Appliance in Lighting and Power Co.

Mr. La Roche was an aggressive man in both the sport and trade branches of automobilism, in both of which he won high rank. He was among the early members of the Automobile Club of America.

The funeral will take place from the residence of Mr. La Roche's brother-in-law at Germantown, Pa., Sunday afternoon.

FLETCHER GUEST OF HONOR

New York, N. Y., March 4—H. W. Fletcher was given a luncheon today at the garage of the de Dietrich American Branch in honor of his victories and record-breaking feats at Ormond and Havana. George Mark, who rode with him, was included in the compliment. As driver of the 80-horsepower de Dietrich owned and entered by O. F. Thomas, of New York, Fletcher won the Vanderbilt cup at 100 miles at Ormond in record time, and at Havana set up new world's records at 5, 10 and 20 kilometers and incidentally scored a 45-second mile.

There were some sixty or more guests present. With coffee and cigars, of course, came speechmaking. Tom Moore sustained his reputation as an inspiring toastmaster. The guest of honor, though he apologized for his shortcomings as an orator, made some pat remarks complimenting the car he drove, thanking Mr. Thomas and the de Dietrich people for their generous backing of him, and declaring that whatever nerve he had he owed to his father, an English army officer.

Silent toasts were drunk to Frank Croker and Frederic A. La Roche. W. K. Vanderbilt, Jr., and Sir Thomas Dewar were toasted. Harry Palmer read a clever poem to Fletcher. Baron Frederic de Turheim welcomed the guests, and President Dalzell, of the Sportsmen's Show Association; E. E. Schwartzkopf, J. M. Holland and John C. Wetmore were among the speakers. Special stress was laid on the fact that the de Dietrich car had made its fast mile and short distance records after 3 weeks of campaigning and that an American driver had accomplished so much with it where Gabriel had failed.

HIGH CLASS STUDENTS

Chicago, Ill., March 6—The first of a course of ten lectures on gasoline automobile construction, in connection with the Young Men's Christian Association of this city, was delivered in the lecture room of that institution, last Friday afternoon, by E. W. Roberts, of Clyde, O., who has been engaged for the entire course and who makes weekly trips from Clyde for this purpose. About thirty persons attended the opening lecture, which dealt with different types of motors used in automobiles, and the method of operation of each. It was noticeable from the class of men attending, that the course will be patronized by a desirable brand of citizens. Many of those on hand were owners of cars, but the major portion were intending purchasers. The lecture lasted an hour and was followed by a spirited discussion.

French Reliability Trials



PARTICIPANTS IN FRENCH RELIABILITY TRIAL AT ORLEANS

Paris, France, Feb. 25—The first long automobile reliability trial ever held in France is now taking place. It started last Sunday and will end tomorrow, thus being a 7-day test, Thursday having been set aside as a day of rest. Every other day the competitors cover about 125 miles, in morning and afternoon stages. The Automobile Club of Seine-et-Oise projected the event nearly a year ago, and it was thought that there would be a large number of entries, yet only twenty-one cars and eight motor cycles were entered, while twenty-four others entered their cars for the first day's run, having been allowed to start by a special arrangement.

The disappointment is great among the organizers that only so few manufacturers have taken an interest in the competition. It is probable that this seeming lack of interest is due to the fact that the trials are being run at a time of the year when the roads are in their worst condition and when motoring is a hardship, rather than a pleasure. The organizers purposely selected the month of February for the trials because they thought it to be the best time to make practical tests under unfavorable weather conditions. Thus far there has been only 1 day of moderately good weather, while on 4 days it either rained or snowed.

It is required that the cars must not stop after having started on any stage, even to take on fuel. Stopping scores a loss of 100 points. In the case of tire repairs necessitating a stop, fifty points are lost. The cars are allowed to go at a speed of 18½ miles per hour at the most, but must comply with the local speed regulations. An exact time is allowed in which to cover each stage, and three points are lost for every 5 minutes under or over that time. All told, a competitor may secure 2,800 points, 200 being the maximum for each half-day run. In the scoring of points the following will be taken into consideration: regularity of travel; speed on hills according to the kilometer-ton; quickness in starting the motor; comfort, elegance and protection against rain; easy access to the various parts, such as motor, carbureter, transmission gear and lubricating devices; convenience and efficiency in handling brakes; skill in handling the car; noise when changing speed; springs; protec-

tion of the mechanical parts; automatic regulation of the motor; illumination of interior of car.

All the morning runs were started from Versailles to some noon-stop point, while the afternoon runs were return runs over different roads, there thus being fourteen different routes for the 7 days. The cars were divided into four classes, according to price, and there was also a class for motor cycles. Fourteen motor cars and four motor cycles started on the first day's run, while ten of the twenty-four entrants took part in the first-day auxiliary run for owners. In the first class, for cars costing up to \$1,000, the starters were three one-cylinder, 6-horsepower de Dion-Boutons; a single-cylinder, 7 horsepower Regina; and a single-cylinder, 6-horsepower Bailleau. In the second class, for cars costing from \$1,000 to \$1,600, there were two starters, a four-cylinder, 14-horsepower Chenard-Walcker, and a two-cylinder, 12-horsepower Clement-Bayard. In the third class, for cars costing from \$1,600 to \$2,400, there were five starters, a Gardner-Serpollet steamer; a two-cylinder, 10-horsepower de Dion-Bouton; a two-cylinder, 12-horsepower de Dion-Bouton; a four-cylinder, 18-horsepower Chenard-Walcker; and a four-cylinder, 12-horsepower Decauville. Two vehicles started in the fourth class, which was for cars costing more than \$2,400, a Gardner-Serpollet, and a four-cylinder, 14-horsepower Le Roy. Two 2½-horsepower German Neckarsulm motor cycles, a 2½-horsepower La Francaise, and a 2¾-horsepower Stimula were the four motor cycles which started.

During the night preceding the start it rained continuously and the roads were in wretched condition at the time of starting, yet every starter completed the day's trip. The owning tourists also completed the entire trip and the gold medal for the best average run and hill climb in their division was awarded to a four-cylinder, 18-horsepower Peugeot. The other cars in this section were six de Dion-Boutons, one Decauville, one Mutel, and one Automo, the latter scoring second.



There were thirteen starters on the second day, when the roads were in even worse condition than on the first day. Soon after the start it began to snow, and in the afternoon there was a severe storm.

Cold weather prevailed that night and on the morning of the third day, the competitors were more cheerful, as there were no signs of storm, and they expected to complete the two stages without any one dropping out. So it was, for all the fourteen starters made good.

The fourth day's routes were not difficult as far as the roads were concerned, but as it was below zero and very windy, the drivers suffered a great deal. Ten out of thirteen who started in the morning came back to Versailles before the time limit was up. The motor cycle drivers were almost frozen, and it was decided by the committee to stop the competition as far as these little two-wheelers were concerned. The most careful of all the drivers of cars was Cormier, in a de Dion-Bouton, who generally started one of the last and keeping up a steady, moderate gait, managed to make many of the best runs.

The fifth day was supposed to be a day of rest, but the judges started a brake test and also examined every car in detail, especially the extra parts and accessories carried. Cormier probably carried the largest supply, as 170 different parts were found in his car.

All of the de Dion-Boutons completed the two runs of the sixth day in good condition, and, according to outsiders who have been following the trials, it is thought that these cars will classify among the three leaders, the other two of which are a Chenard-Walcker and the Decauville.

Before the morning start the sixth day, a special starting competition was held and the Chenard-Walcker won first place, requiring only 15 seconds to be started.

CHANCE TO WIN \$9,000

Paris, France, Feb. 25—Chevalier Vincenzo Florio, the Italian automobilist, has been here and conferred with local sportsmen in regard to the Florio cup race, which is scheduled to be run in Italy in September. As many prominent French manufacturers have promised to enter cars in the race and in order to increase its value, the Italian has added \$6,000 to the \$4,000 he had already given for cash prizes, and it was decided that the first prize would be \$9,000; the second, \$600; the third, \$400, and the fourth, \$200. Of the \$9,000 first prize money, the owner of the successful car will receive \$8,000 and the driver \$1,000. The entry fee per car is \$400, but if three cars are entered by one concern the fee will be \$1,000 for the three machines.

BOSTON NOT SELKING CONTROL

Boston, Mass., March 5—There seems to be a misplaced apprehension on the part of certain New Yorkers regarding the control of the American Automobile Association by Bostonians. An evident objection to the possible appointment of a Bostonian to the chairmanship of the racing board, and likewise the possible selection of a man from this city for the secretaryship has caused unnecessary talk. While there is no question of the ability of Boston to furnish men for both positions, there is every reason to believe that neither will come to Boston just now.

William Wallace, whose name has been connected with the racing board chairmanship several times, has absolutely refused to take the

job. H. L. Bowden has thrice been offered the position, and it is said here that he has each time declined the honor. Unless this position comes to Boston it will be difficult to give this city the secretaryship, as the business demands these two officials keeping in close touch with each other, meaning virtually their residence in the same city. J. C. Kerrison, secretary of the Bay State Automobile Association, has been mentioned as a possible secretary, but as he has not been formally offered the position he will not discuss the matter.

Showing the position of the Boston men on the subject is the fact that Mr. Wallace has started a boom for E. R. Thomas.

GRAND PRIX CALLED OFF

Paris, France, March 2—There will be no grand prix de l'Automobile Club de France this year. This was decided last night at a meeting of the sports committee of the French club. It has been found impossible to please everybody in this race matter, and many prominent manufacturers expressed dissatisfaction at the club's decision to run the Bennett cup race independent of the grand prix, and had decided not to take part in either event. It is thought that with yesterday's decision everybody will be satisfied and that all who have entered for the Bennett cup race will take part in the French elimination race next June.

It is now also uncertain whether or not the grand prix de la Republique will be run this year. This event originated with the daily sporting paper *les Sports*, which offered \$30,000 in cash prizes, of which \$25,000 were to be given to the proprietor of the victorious car, \$4,000 to the driver, and \$1,000 to the mechanic. Besides *les Sports*, another paper, *le Journal*, and the municipality of Aix-les-Bains are interested in this proposed event, which is the direct outcome of jealousy of that city over the selection of a circuit not including it for the running of the cup race.

RACE CARS ON ICE

Stockholm, Sweden, Feb. 17—Many motorists from Germany, England and France, and some from other European countries came to this city to witness the various competitions and games for automobilists, sledge drivers and skaters, which were held on the ice of Malar sea. Only a few of the scheduled events for automobiles could be run on the ice, as the surface was too rough. About thirty automobiles took part in the races and other competitions, some of which were held on the snow-covered roads between Stockholm and Upsala. An interesting feature of the meeting was that the majority of the cars were of American make. Among these cars were an Oldsmobile, Franklin, Orient and Cadillac. Two of the most prominent motorists who attended the meeting were Prinz Carl, of Sweden, and Count Clarence von Rosen, president of the Swedish Automobile Club. The latter drove an Oldsmobile touring car.

LYTLE IN CUP RACE

New York, N. Y., March 5—Herbert Lytle has been selected to drive the Pope-Toledo six-cylinder racer that has been entered for the Bennett race, to be held in France next June. This car will be finished within a couple of weeks and Colonel Pope will probably send it to the Ormond beach in Florida for a preliminary testing of the machine.

THE KILOMETER RECORD

Figures Have Been Beaten Each Year and Now the 20-Second Mark Is Unsafe

Paris, France, Feb. 24—French sporting papers have written a good deal concerning the speed that was attained during the Ormond race meet. Surprise has been expressed that, although the world's mile record was broken, nobody came within the Baras official kilometer record, excepting Bowden, whose time has not been accepted on account of the overweight of his big racer. It is interesting to note that since 1902 the kilometer record has been broken ten times officially. The Gobron-Brillie and Mors each hold four of the official records, the Mercedes two and the Darracq one.

Leaving aside the kilometer established by Jenatz in his electric-gasoline car, and also the one made by Serpollet in a mixed machine, it will be found that the first time the breaking of this record created general comment was April 9, 1902, when C. S. Rolls covered the standard French distance on the road in Acheres in 35.2 seconds, breaking the former record, which was held by Werner, and a Mercedes, by 6 seconds. Rolls drove his Paris-Berlin Mors racer. Less than a month later an American, W. K. Vanderbilt, with a 40-horsepower Mercedes, broke the record by 3 seconds on the Ablis road. July 27 of the same year Baron de Caters went after the American's record at Ostend, Belgium, and succeeded in driving 1 kilometer in 0:29.4.5. Within less than a week Vanderbilt was again the possessor of the much-coveted record, having clipped off 2.5 seconds from the baron's time. It was done with a Mors racer, similar to the machine used by de Caters. In November of the same year Fournier broke the record by 1.5 second, and a few days later, November 11, Augieres, while establishing his mile record of 46 seconds, covered the kilometer in 29 seconds, thus being the official holder of the record at the end of the year, notwithstanding the fact that Jarrott had covered the kilometer in 0:28.1.5 with a Panhard, and Baron de Forest and Gabriel, both driving Mors racers, having covered the distance in 0:26.2.5. These last three records were not recognized officially.

Many attempts to break the record were made during the summer of 1903, but it was only on July 17 that the record was again broken, the successful driver being Rigolly, who went the distance in 0:26.4.5 in his Gobron-Brillie car. This happened at Ostend, Belgium, but it was not long before French

soil was again to become the owner of the record. November 5, on the Dourban road, Duray made a new record with his new Gobron-Brillie by taking off 2.5 second from Rigolly's time.

It was then generally thought that the record would remain in France, or, at least if the record was to be broken, a French machine would do the work, inasmuch as the cars made in France were then considered by far the fastest in the world. Ormond was not known to the majority of automobilists in France, and thus when the news arrived that W. K. Vanderbilt had broken the record, and at that by the bagatelle of 2.1.5 seconds, there was much surprise in the automobile world of France. The new record of 24.1/4 seconds was made with a 90-horsepower Mercedes on January 26, 1904. Frenchmen then made up their minds to get this national mark back and pointed to the annual Nice meeting. And there they were satisfied, as Rigolly broke the record three times in succession and placed it at 23.3.5 seconds. He drove a Gobron-Brillie, and so he did July 18, at Ostend, when he knocked off 2 seconds from his own record, which he cut to 21.3.5. This was considered about as fast as an automobile could be driven, but Baras came to Ostend to demonstrate that it was only a guess, and he drove his new 80-horsepower Darracq racer in 21.2.5 seconds over this fine level road of Belgium. Others made trials in various countries, but did not succeed.

USE SAME CIRCUIT

Paris, France, Feb. 24—The motor cycle cup race which is scheduled to be run June 18, will probably be held on the same circuit upon which it was run for the first time last year. This was practically decided upon a few days ago, when a delegation of the Motor Cycle Club of France, headed by President Pierre Bardin, went to see the prefect of the Seine-et-Oise province and asked permission to have the event run on the St. Arnoult-Dourdan-Ablis circuit. The French eliminating race for this event is scheduled to be run May 28, upon the same circuit, which is about 35 1/3 miles long and will have to be covered five times. It is likely that there will be three neutralizations—one of 8 minutes at Dourdan, one of 3 minutes at La Foret-le-Roi, and one of 5 minutes at Ablis.

MOTOR CYCLE ENDURANCE

The Autocycle Club of France, together with the daily sporting paper, *Sports*, has arranged a motor cycle endurance run through France which will start April 29, according to present plans. The run has been divided into fifteen daily stages varying from 55 to 100 miles and totaling about 1,650 miles.



STARTING A RACE ON THE ICE AT STOCKHOLM

A. M. C. M. A. TO HOLD SHOW

The Organization of Independent Makers Will Not Leave the New York Field Exclusively to the A. L. A. M.—Neither Faction Seems Alarmed of the Other

New York, N. Y., March 7—Special Telegram—Job E. Hedges, counsel to the American Motor Car Manufacturers' Association, talked with a MOTOR AGE man today about the new independent organization and its intentions.

"The association had its origin," said he, "in the announcement during the recent New York show that the Association of Licensed Automobile Manufacturers proposed to hold a show at Madison Square garden next year exclusively for its members. Some of the gentlemen connected with the present independent movement talked the matter over with me then and sent for me to come to Chicago, where I formed the association for them whose organization was completed at Detroit on February 24. The object has already been printed."

"What about the rumor that you are entering into litigation either as defendants of patent suits or as complainants in actions of your own based in alleged basis patents held by your members?" asked the MOTOR AGE man.

"We don't propose to have anything to do with the Selden patent or any other patent suit. As for myself I would not know a patent if I saw it. The members will look after their own patent suits. We merely propose to manage our own affairs and not let any one else manage them for us. Information and news about ourselves will begin pretty soon to be given out right here at this news center."

"By a press agent?"

"No, by me, and what I give out will be on the level and consist of facts. As secretary to Mayor Strong I had some experience with newspaper men and think I can serve fairly satisfactorily as our own press agent."

"Are there any initiation fee and dues to the association, and is the former a thousand dollars, as reported?"

"I do not care to say more than that the association is in funds and has made provision to continue so."

"Will you hold a New York show?"

"We will."

"Have contracts been made for a show in this city?"

"I will not say that, but I will say that it is our intention to hold a show here, and we come pretty near being positive that we can and will hold one. It will not be a show exclusively for our own members either, but will be open to all. We believe we can do the best for ourselves by doing the best for all."

"How many members have you?"

"I think some twenty-five or twenty-six. Yes, I see the list of alleged members you show me has but nineteen names. No, I cannot recall any names not on that list. I expect, though, a full list of members in a few days. I cannot tell you the date of our next meeting. Our meetings are held on call."

"The formation of the so-called independent association," said Mr. Day, "makes no difference whatever in the situation. The A. L. A. M. is based on a patent, on which all our members are paying a royalty. A suit is in progress, in which a large amount of testimony

has been taken. There is every probability that this suit will reach an argument and decision before the present year ends. The court has issued an order, you know, limiting the Ford people until May 1 to get in their testimony and confining them to the testimony of two witnesses, Prof. Rolla C. Carpenter and Jesse M. Smith, and such exhibits as may be introduced in connection therewith."

"I know of several unlicensed concerns," he continued, "which will not join the independent association. I see in this list of members several notable absentees among unlicensed concerns of considerable prominence. Despite rumors to the contrary, I am not inclined to think that the independent association has any intention of entering into any legal fight either in defense of those sued under the Selden patent or based on any patents of its own."

Detroit, Mich., March 5—There is nothing new in the A. L. A. M.-A. M. C. M. A. situation that is discoverable here. The local manufacturers who are in the Association of Licensed Automobile Manufacturers and the licensed car dealers affect to despise the new association.

"It's a great big bluff, with the Ford people as the only ones who amount to anything in it," is the way "licensed" men put it—but having called it a bluff he did not want the MOTOR AGE man to use his name. He went on to say:

"The fact is that the Ford people are responsible for the whole thing. They realize that they have a fight on that is going to cost them dearly and has cost them dearly already. They want as much moral support as possible. Last year they were shouting 'down with the trust,' and claimed in their advertising that we are persecuting them. Now they want to have a lot of others persecuted too. They figure that we will not want to carry on a scrap which is going to cost us a lot of money. But we will. There is more involved in this than most people think, and we cannot afford to lay down."

Then here is the story as it is given to you from the other side:

"We have got them on the run and you will see that before another year rolls by there will be no A. L. A. M. The fact is that there have been too many automobile companies started to be put out of business now. When the association was organized there was only one company that had the alleged right to manufacture automobiles. That was the Electric Vehicle Co. The other members of the association were bulldozed into coming in. They have to pay a tax for every automobile they manufacture and they do not like to do it any better than we do, except they did not have as much backbone as we have. They are going to fight us, maybe, for a while. But soon they will see that they are only making the noose tighter around their own necks."

"When you stop to think of it, it is a big joke. Here are these makers putting up money to defend a case, which, if it should be successful, would only make it more necessary for them to keep on paying royalties to the Elec-

tric Vehicle Co. They are actually paying for the privilege of being bled! Not only that, but they are going to defend their blessed privilege of paying tribute through all the courts of the land. Funny, isn't it?"

"See Mr. Hedges!"

Those are the three words with which Chairman Couzens, of the new association, greets all newspaper and trade paper representatives now. It doesn't make any difference whether they want to talk association business or not; Mr. Couzens is taking no chances these days.

And the Egyptian Sphinx is an Edison phonograph in comparison to other men whose names have been mentioned as belonging to the association. You call on Henry Ford, the presiding genius of the Ford company:

"Anything new in the association business?"

"Say, I think I can get the weight of that new racer down to 1253½ pounds," he replies.

"I said is there anything new—"

"And with that new shaft I'll go 130 miles an hour."

"I called to ask if th—"

"Yes, do come up, any day; I'll be glad to take you for a spin that will make your hair stand up."

"Thank you; if you can only tell me—"

"Yes, I'll go out on the ice on Lake St. Claire if you like."

Then the telephone bell rings and Mr. Ford is called to some other part of the plant.

HOT FIGHT IN FRANKLIN SUIT

Syracuse, N. Y., March 7—The suit of the New York Automobile Co. against the H. H. Franklin Mfg. Co. was begun in Supreme Court last week, and after a day spent in taking testimony the case was adjourned. Suit was brought to recover \$50,000 damages from the Franklin company on the ground that the latter hired John Wilkinson, the designer of the air-cooled machine which the Franklin company is now manufacturing, away from the New York company, taking the models which the New York company had spent a large amount of money to develop and giving them to the Franklin company. The Franklin company alleged that Mr. Wilkinson had a perfect right to quit the New York company and go to the Franklin company and that the machine which the latter is now making has no connection with that which the New York company developed. It was claimed that H. H. Franklin acted for a short time as manager of the New York Automobile Co.

The first witness sworn was E. N. Trump, one of the directors of the New York company. He swore that Mr. Wilkinson had spoken to him regarding the formation of a company to manufacture an automobile of which he was the designer. The gasoline engine used had four cylinders and was air-cooled. Mr. Trump said he afterward became a stockholder and director. After that Mr. Wilkinson made another model which had several improvements over the old. The new model was made at the factory of the Straight Line Engine Co. Mr. Trump said that before the summer of 1901, when he became identified with the company, there was not an air-cooled, four-cylinder automobile motor on the American market, and that this was one of the reasons why he decided to take an interest in the company. In 1901 Mr. Trump said there was talk of securing a manager and H. H. Franklin was selected for the position. Things ran along for a time and Mr.

Franklin had the two models and all the drawings. Then he started in to form a company of his own in which Alexander T. Brown became interested and was the heaviest stockholder. Ernest I. White and some of the others of the New York company went to Mr. Franklin and asked for the property of the company, but Mr. Franklin refused, stating that he had incorporated some of his own ideas. Mr. Franklin offered \$2,500 for the time and money which the New York company had spent, but Mr. White refused. Mr. Franklin gave as his reasons for not continuing with the New York company that the machine did not come up to his expectations. Mr. Trump said he afterwards saw Mr. Franklin, who tried to get him to go in with the new company, but he refused.

Upon cross examination, Mr. Trump said that his company had two vehicles when Mr. Franklin pulled out, and a lot of experience in developing automobiles. He said he considered the air-cooling feature especially valuable and had never seen or heard of an air-cooled automobile motor, although as a mechanical engineer he took current publications.

PLAN ROAD RACE CIRCUIT

New York, N. Y., March 8—Special Telegram—A project is on foot here to establish a 20-mile road racing circuit and build a 2-mile track and automobile country club house near Pennington, N. J. The latter is 40 miles from Philadelphia and 50 miles from New York. Emerson Brooks is interested with Colonel John Kimble and Wilson Hunt in the enterprise and will take down a party of A. C. A. members and prominent automobilists to inspect the course on Friday. The scheme has no connection with Morgan's Barnegate Park.

Senator Morgan has sent word from Ormond that he is arranging a circuit for next winter, to include automobile races at Jamaica, Havana, Ormond and Charleston, and boat races at Nassau, Miami and Palm Beach.

H. W. Fletcher in conversation with a MOTOR AGE man today confirmed the report that E. R. and O. F. Thomas, at present business and horse racing partners, have decided on an extensive partnership in automobile racing, with Fletcher as the stable's professional chauffeur. As such Fletcher will drive the firm's cars in all track races, and O. F. Thomas' racers in road contests. E. R. Thomas will drive his own car in the latter. It is believed the intentions are to secure the fastest track racers obtainable and send Fletcher after Oldfield's scalp.

BOSTON'S BIG SHOW

Boston, Mass., March 6—Exactly 325 manufacturers and dealers have secured space for the Boston automobile and motor boat show, under the auspices of the Boston Automobile Dealers' Association, which opens in Mechanics' hall next Saturday evening. This is the largest show of the year and will unquestionably prove of considerable value to the local trade. The members of the committee in charge of the show—George H. Lowe, E. A. Gilmore, J. H. MacAlman and Manager Chester I. Campbell—have worked faithfully to produce results.

Manager W. E. Eldridge has everything in readiness for the opening of the Importers' salon in Symphony hall next Monday evening. This exhibit is to be an exact replica of the New York salon, the majority of the machines exhibited there having been brought to Boston.

ARE MAKING FAST CRAFT

The Connecticut River To Be the Scene of Much Power Boat Racing Next Summer

Hartford, Conn., March 4—That the motor boat season on the Connecticut river will be interesting can now be appreciated from the boats now building and on the designing boards.

Captain A. Bruce Tooker of the tug A. M. Smith, who has built such fast sailing winners as the Red Jacket, and who last season invaded the motor boat field with a moderately powered winner, has gone in for a top speed boat, now nearing completion at Ely's yard in Middletown. This new craft is 33 feet in length, 3 feet 9 inches beam, and while high in the bow the deck line runs down to a low tuck astern. This boat is from Captain Tooker's own design and is built as light as a canoe, with two cockpits and space under the midship deck for the motor. Russell Frisbie, of Cromwell, formerly with the Electric Vehicle Co. and a builder of several gas engines, has undertaken to power the craft. He has nearly completed the motor, which is of six cylinders. Mr. Frisbie is modest in its rating and calls it 37 horsepower, though from the size of the cylinders and its speed it is to be expected that it will show up something like 50-horsepower. The motor will weigh about 500 pounds.

With this boat out of the way Mr. Ely will begin work on another flyer for H. W. Hubbard, of the Hubbard Mfg. Co., of Middletown. Mr. Hubbard will put his own motor in this craft, and it is expected that the Hubbard boat will be quite as well powered as Tooker's, so that there ought to be a good contest of speed between these boats. In addition, however, E. N. Way, who has designed some of the fastest motor boats owned in Connecticut, has two fast and differing types of boats on the board, shortly to be laid down, which are to be fitted with high power not yet determined upon, but which will undoubtedly come into this class. T. H. Smith, of Essex, has also built a racing hull into which high power will be installed so that with the boats existing there promises to be the greatest of speed contests on the Connecticut river during the coming season, and the successful 50-mile motor race of last season will be duplicated with increased interest and higher class entries.

F. A. Law, who retired from the Electric Vehicle Co.'s staff some time since, is now at work on a new four-cylinder 20-horsepower marine motor, which is expected to be an important proposition in the marine field. Mr. Law has long divided his interest between automobiling and yachting and is the owner of a winning sailing craft designed by E. N. Way. Mr. Law with Mr. Way and Captain C. D. Holmes, of Mystic, owner of the Flip, represented the Hartford Yacht Club at the congress of the American Power Boat Association, held at the Hotel Astor during the week of the motor boat show.

CUTLER AT HEAD OF N. A. A. M.

New York, N. Y., March 8—Special Telegram—At its meeting today, at which twelve members were present, the National Association of Automobile Manufacturers' executive committee chose E. H. Cutler, of the Knox Automobile Co., president; George W. Bennett, of Thomas B. Jeffery & Co., first vice-

president; A. L. Pope, of the Pope Mfg. Co., second vice-president; S. D. Waldon, of the Packard Motor Car Co., third vice-president; W. R. Innis, treasurer, and Percy Owen, secretary.

The report of the treasurer showed that each of the New York and Chicago shows had yielded to the association something over \$16,000. The proposal to hold a joint parts and commercial vehicle show early in the fall was taken up for final action, and was decided adversely.

R. D. Chapin, chairman of the good roads committee, made a report on the progress of the Brownlow bill, in the interests of which a bureau has been established in Washington. The efforts of the bureau are being devoted largely to the press, agents for and users of automobiles. A petition will be presented at the next session of congress, when, it is hoped, the bill will be reached.

The Wayne Automobile Company, of Detroit, and the Buick Motor Car Co., of Flint, Mich., were admitted to membership.

Consideration of show plans was deferred, pending the appointment of new committees. It is now certain that the Automobile Club of America has had no negotiations with the American Motor Car Manufacturers' Association with view to the promotion of a joint show, and has no intentions in that direction.

TWIN CITY SHOW PROJECTED

Minneapolis, Minn., March 6—There is at last a possibility of a Twin City automobile show in Minneapolis. During the past week the Minneapolis Automobile Dealers' Association has had the matter under advisement, and it is stated that enough encouragement has been received from eastern manufacturers to make the plan a feasible one.

It is proposed to hold the exhibition in the new Minneapolis auditorium, which was opened to the public last week. The show will either be held there or in the International auditorium. Local dealers have not been enthusiastic heretofore in promoting a show, as they have been rushed in the spring to such an extent that they have not been able to give time and labor to show promotion.

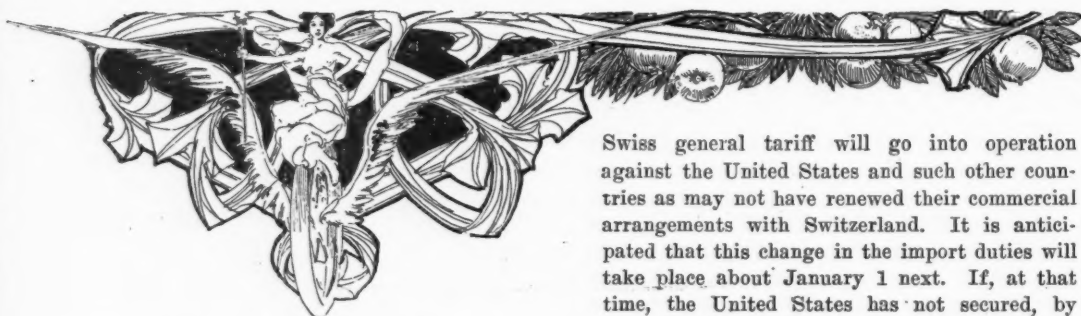
NONE IN PITTSBURG

Pittsburg, Pa., March 4—Pittsburg will have to get along without an automobile show this year. Duquesne Garden is the only available place for such a show, and ice sports claim it till the end of March. It would be 2 weeks then before the building could be put in condition for the show, and in order to have it of commercial advantage it must be held at least 3 weeks before the first of April. Considerable enthusiasm over a proposed show was worked up among the dealers, one of whom was ready to advance \$1,000, but plans were laid by until another year.

ANOTHER IMPORTER YIELDS

New York, N. Y., March 8—Special Telegram—A judgment by consent has been entered in the Selden patent suit which had been brought by the Electric Vehicle Co., of Hartford, Conn., against Melville D. Chapman, of New York, importer of the Rochet-Schneider cars, made in France. The action was begun because Chapman imported cars without license plates. The importer's father said that he settled the suit to avoid further annoyance, as he had been constantly summoned to court, which caused him much loss of time and money.

THE INTERNATIONAL EXCHANGE



EXPORTS STEADILY INCREASE

American automobile manufacturers started off the new year with a large increase in the value of automobile exports, the latest compilations of the government statisticians showing that the exports for January were valued at \$196,144, as against \$89,535 for the same month last year. For the 7-month period ending January, 1905, the value of the exports was \$1,122,638, as against a value of \$1,014,124 for the same period of 1904, and \$602,999 for the 7 months ending January, 1903. Now that such a good start has been obtained it is to be expected that this year's exports will be close to \$3,000,000.

SCANDINAVIA BACKWARD

Automobiles have not yet been introduced in various parts of Scandinavia, particularly around Bergen, Norway, and their appearance would be looked upon askant. The universal sentiment in that part of the world is one of disfavor, a feeling that the automobile, so well adapted to other countries, is not suitable to nor safe for use in Norway. Norway is famous for her many miles of excellent highway and the wonderful feats of engineering achieved, that good, solid roads might be had with the least possible grade over mountains of considerable altitude.

RECORD OF 1904

Reports have it that during the fiscal year ending June 30, 1904, automobiles and parts to the value of \$1,662,346 were declared for export to the United States from Paris. Automobiles to the value of \$19,793 were shipped from the United States to Hawaii during the calendar year 1904, as compared with a value of \$4,628 for 1903, the shipments of automobiles to Porto Rico increased from \$3,061 in 1903 to \$29,097, while those to the Philippines decreased from \$3,932 in 1903 to \$3,520 in 1904. With the exception of the Philippines, the non-contiguous territories of the United States are beginning to be good customers for American cars.

SWISS FIELD PECULIAR

The number of automobiles used in Switzerland is increasing rapidly, and there is sure to be a large demand for them as soon as the price is low enough to place them within the reach of people of moderate means. The principal task of the American automobile industry in getting a foothold in the mountain republic will be to meet successfully the preference, or, if one may say so, the "prejudice" for the popular French and German cars. The prospect for American cars will be affected, too, by the provisions of the commercial treaties which are now in course of negotiation with the countries contiguous to Switzerland. The present duty on imported articles is \$3.86 per 220.46 pounds. On conclusion of the treaties the new

Swiss general tariff will go into operation against the United States and such other countries as may not have renewed their commercial arrangements with Switzerland. It is anticipated that this change in the import duties will take place about January 1 next. If, at that time, the United States has not secured, by treaty, the advantages that will no doubt have been accorded to competitors, its exporters will have to pay three times the duty mentioned. It should be stated that motor cars imported in detached parts may be introduced at present on payment of \$1.15, instead of \$3.86, per 220 pounds.

ITALIAN IMPORTS INCREASE

The 128 motor cars which were imported into Italy in 1899 were valued at \$51,200; in 1900, 194 cars, valued at \$232,800, were imported, while in 1901 the number increased to 286 cars, worth \$637,400. In 1902 there was a decline, 271 foreign cars entering the country, with a value of \$417,600. In 1903 the value of the 297 cars imported was \$561,400, while in 1904, 342 cars were imported, valued at \$688,800. Most of the imported cars came from France, in 1903, 243 of the 297 cars imported being French.

MOTOR BOATS IN CHINA

While there is no extended market in China for automobiles, in the city of Shanghai there are a good many cars in use and their popularity is increasing. It may almost be said that an automobile boom is on in that city. American manufacturers should have representatives among the business men of Shanghai, for American makes will be received upon their merits.

The prospect for motor boats is very bright. The whole of China is a net work of canals and rivers upon which motor boats can be operated. The motor boat as it is now made in the United States is practically unknown in China. In Shanghai and other prominent trading points on the coast there are a number of modern launches, but the great interior is practically untouched. The Chinese people who have sufficient means to buy such things are turning more and more in the direction of modern western inventions, and there is no doubt that a consistent and persistent campaign in behalf of American motor boats would result in building up a great

and permanent trade. The need of motor boats is there, and the Chinese and foreigners domiciled in the empire are appreciating the need. So far there has been little done to meet it. There is one agency for American boats in Shanghai, and several other firms there have a working arrangement with concerns in the United States for the sale of boats, but the business is not pushed, and there will probably be little change in the situation until American manufacturers go at the matter systematically and with energy. It is quite possible that a strong advertising campaign, even in English, would result in a good start for a motor boat boom, and catalogues in Chinese would undoubtedly be effective. But the real need is personal representation and hard work.

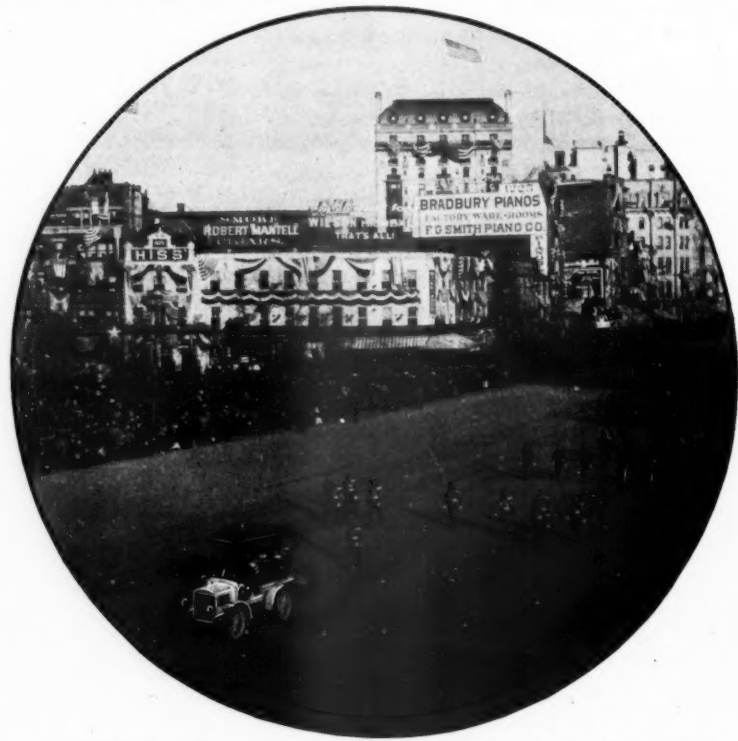
BELGIUM BUYS AND SELLS

During 1904 the exportation of Belgian automobiles amounted to \$324,420, representing an average of \$1,763 for each of the 184 exported automobiles. England bought fifty-four of these cars and France thirty-nine. The importation of foreign cars amounted to \$172,170, or an average of \$1,083 for each of the 159 imported cars. The exports of motor cycle parts has decreased, amounting to \$408,279, as against \$509,117 in 1903.

MOTOR CYCLES FROM GERMANY

Last year 1,745 motor cycles were exported from Germany, their value amounting to \$305,250, an average of \$175 per machine. During 1903 the exports of motor cycles were valued at \$146,250, and during 1902 at \$24,000. The importation of motor cycles increased from \$41,500 in 1902 to \$110,750 in 1903, and \$159,500 in 1904.

German roads are favorable to motor cycle use, and owing to the few low priced automobiles manufactured in the country the motor cycle is proportionately popularized.



Last Saturday, March 4, an automobile figured for the first time in the history of the United States in the inaugural procession of the president. The unusual sight brought forth cheers and applause from the half a million people who lined the streets. The automobile, a White Steamer, was used by the Twenty-third regiment of the National Guard of New York as an ambulance. It carried several members of the hospital corps and the medical and surgical supplies and a stretcher. As the automobile passed in front of the reviewing stand, President Roosevelt turned to General Chaffee, saying, "I suppose some day there will be more automobiles than horses in the inaugural parade."

AFFAIRS OF THE CLUB MEN

Familiar Topic—W. W. Niles, counsel of the club, last week addressed the Automobile Club of America at its Tuesday night's meeting on the automobile and the law.

May Share Athletic Club—It is possible that the Detroit Automobile Club, of Detroit, will accept a proposition from the local athletic club, which is now having a new club house erected, whereby a part of the building will be fitted for the use of the automobilists.

After Law Breakers—At a recent dinner of the Santa Barbara Motor Club, of Santa Barbara, Cal., it was unanimously decided by the members that they would do all they could to prevent local as well as visiting motorists from violating the city speed regulations.

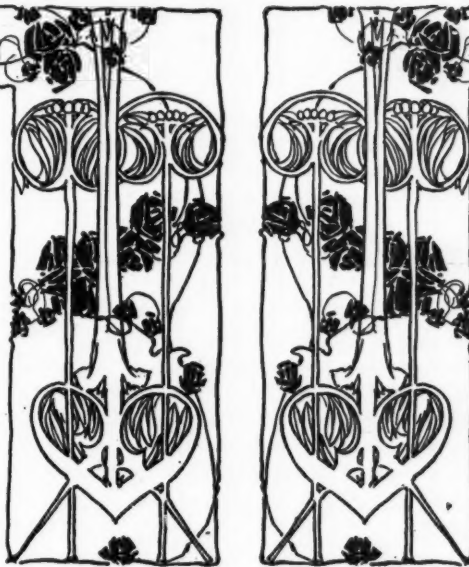
Has Official Repairer—At a meeting of automobile owners and enthusiasts of Le Roy, N. Y., the Le Roy Automobile Club was organized, with H. B. Ward as president; D. C. Howard Prentice, vice-president; Dr. R. Lee Skinner, treasurer and secretary, and W. M. Speer, official repairer.

Modest Names—At a recent meeting of the Netherland Automobile Club, the national automobile organization of Holland, J. W. G. Boreel van Hogelanden was elected president; R. Sandberg of Essenburg, vice-president; H. A. G. Venema, secretary, and A. van Hoboken van Hoedekenskerke, treasurer.

Wouldn't Run Cheap Race—Henry Meunier, chairman of the yachting committee of the Automobile Club of France has resigned because of the refusal of the club to contribute more than \$1,000 for the motor boat race which is to be run between Calais, France, and Ramsgate, England. The yachtsman donated \$2,000 for the event.

Where Is Reeves?—The Brighton Beach Automobile Club, of Brighton Beach, N. Y., has been incorporated, Charles H. Hyde, president of the New York Motor Club; William A. Angeman and J. G. Battersby of the Brighton Beach Racing Association, being the directors. A series of sea shore races will be arranged under the management of John R. Eustis.

Quakers Up and Doing—The recent banquet of the Automobile Club of Philadelphia at the Bellevue-Stratford was a great success. The affair was graced by the presence of quite a number of state legislators, senators and representatives being almost as numerous as automobilists, while a mayor or two, several political leaders and national automobile lights galore formed a combination hard to beat. The latter were used to prepare the legislators for the new law which was sprung upon them at Harrisburg a few days later. Perhaps the solons were not aware of it; but the banquet was too well timed not to have had an object behind it. With Searritt and the inimitable Dill to tell them all about it, the legislators were in fine fettle to consider the state's automobile affairs the following week. Even Senator Roberts, that fountainhead of legislation inimical to automobilists, was evidently melted



by the arguments of Searritt, and gave visible evidences of reformation. Mayor Weaver went out of his way to say that in his opinion an automobile going at the rate of 20 miles an hour was more manageable than a horse proceeding at an 8-mile-an-hour gait—a statement which brought forth “long and continued applause.” He further said that he would do everything that he could to advance the interests of automobilists in Philadelphia. About 125 members and guests were present. The annual meeting of the club is scheduled for March 13, when officers will be elected to serve during the ensuing twelvemonth and action taken upon the report of the location committee, which has been hard at work during the past month looking up various sites for a garage and clubhouse. It is understood that several buildings capable of easy alteration for the club's purposes have been given consideration and that an entirely new scheme looking to the erection of a clubhouse and garage designed especially for the uses of the club will be proposed. In a quiet way the club's law committee has done excellent work during the last year. Almost all local and state legislation, passed and proposed, had its origin in this committee, and when the amount of work and the fact that it costs the club nothing are taken into consideration Philadelphia's representative automobile organization is to be congratulated on the possession of such a capable committee. A circular letter has been sent to each member of the club asking him to use any influence he may have with New Jersey legislators to bring about the defeat of the Scovel amendments now being considered by the legislature of that state. A peculiar feature of the amendments is that they ask for just about what Pennsylvania automobilists are trying to get rid of—arrests without a warrant and licenses for non-resident automobilists touring through the state. Besides, Mr. Scovel would make the fee \$5 instead of \$1 as at present. Either of these amendments would prove a hardship to Quaker City automobilists, and a number of A. C.

P. officials will go to Trenton on Tuesday to witness the protest of the Jersey motorists against their being written into the statute books.

Air the only Liquid?—Prof. Eldred gave a demonstration of liquid air before the New York Motor Club last Friday evening and incidentally enlarged on its possibilities as a motive power for automobiles. The club has grown steadily and its members believe that it will soon be an important factor in metropolitan motoring.

Kansas City Hustling—The Automobile Club of Kansas City, Mo., which has been in existence a little over a year, decided at its last meeting to rent a building for club purposes. Although a western and rather hilly town, Kansas City has kept pace in automobiling with eastern cities and has hundreds of automobile owners. Kansas City expects to have before the end of this season over 500 automobiles in use. There being a state, county and city license for automobile owners, the club has decided to co-operate with the automobile clubs of St. Louis and St. Joseph, in seeking legislation at the present session of the legislature in Jefferson City, to do away with the obnoxious law now in effect in the state.

Enthusiasm in St. Paul—The St. Paul Automobile Club of St. Paul, is making good in real style. The second gathering of the revived organization was held at the Commercial Club March 2, and over 100 automobilists of the city made merry over a unique menu and an interesting program of toasts. Further plans for the season's activities were discussed, and the club, which started with a small membership, was reported as growing at the rate of five members a day. Attorney General E. T. Young, L. A. Wood, L. G. Hoffman, Oliver Crosby, J. T. Spargo, G. J. Shearer and others responded to toasts, and Major George C. Knocks gave an address on Automobile Expositions. J. Harry Lewis was chauffeur of the speech-making.

Cannot Watch Paraders—Some considerable dissatisfaction is reported to exist in the Automobile Club of America, of New York, at the site selected and already purchased by the building committee for the location of the new club house. The kickers complain because the new club will have no outlook on Fifth or other popular avenues, to which they have become accustomed through their present rooms facing the Plaza. The committee's answer is that its conception of what was desired was spacious quarters with ample garage facilities, and that owing to the large lot required and the great cost of land on Fifth, Madison or other popular parade avenues, such a site is utterly out of the question. The site and the plans are yet to be submitted to the members for their approval, but in view of the land having been already purchased, objections are not likely to avail much at this late day. Applications for membership are being made in large numbers on account of the new clubhouse.



The Readers' Clearing House

QUESTIONS

SUGGESTIONS

ANSWERS

FOUR-WHEEL DRIVE

Rockford, Ill.—Editor MOTOR AGE—In the issue of MOTOR AGE of February 23, I noticed reference to four-wheel drive, and I wish to state that the writer and several others are at present engaged in the perfection of a type of four-wheel drive. The illustration shows a car which has covered over 2,500 miles, making a winter trip under adverse road conditions. This car is fitted with a vertical four-cylinder motor, placed beneath the hood, and midway of the driving wheels, and supported on the main frame is a sliding gear transmission. From the counter shaft with the differential the drive is by chain to the rear and front wheels. Shaft drive would be equally suitable if desired. The steering pivot being placed in the center of each hub, gives a rigid and serviceable construction which is practical for commercial uses. The driving and steering arrangements on the front and rear axles are identical, and are such that a car with a 9-foot wheel base can be turned in a 27-foot circle, which is much smaller than that possible with many cars with only front wheel steering.

In practice it is shown that there is a marked advantage in having the power transmitted to the steering wheels, as they tend to pull themselves in the direction of the angle at which they are turning, and this gives the operator complete control in steering under the most severe conditions.

The drive, being applied to the steering wheels, tends to reduce skidding. The four-wheel drive will negotiate the most slippery conditions found on dirt roads and hills without slipping the wheels. In this type of drive the driving strain is distributed, giving less strain on each part, a fact especially noticeable on the chains and tires.—CHARLES COTTA.

HIS FIRST 2 DAYS

Dingman Township, Pike County, Pa.—Editor MOTOR AGE—If my early troubles are of any use to other motoring beginners, here they are:

The agent brought the car to my house on Sunday, October 31, 1904, at 11 A. M. I was out with him until 12:30. In the meantime he told me all he knew about the car. We then went to dinner. At 2 o'clock he started the car.

"Look sharp," he said; "next time you must start the car yourself."

He ran the car 4 miles and returned it to the house. He stopped the car, and turned off the switch, oil, etc.

Here is where my trouble began. He told me about 500 different things about the running of the machine. He was watching me while I went at it slowly and started the car all right.

"Now you get in," he said.

The car was shaking under the power of the engine, and I remember that I was also. We exchanged seats and I ran the car slowly about

half a mile. I think I met more wagons, dogs, trees, telegraph poles, etc., than I had ever seen. We were then in front of the Milford driving park gate. I gave him the key to open it, and went through the gateway all right, which is 20 feet wide. I was not sure whether I was going to strike the top, bottom or both sides of that gate.

I drove half way around the park and then there was trouble. A cow was tied to the pole rail with a rope 60 feet long. This was not the first cow that I had seen tied along the highway; but I knew very well that this cow would frighten and the rope that laid on the ground at that time would not lay there when the car reached it, and not knowing where that rope would be, I stopped the car and removed the rope and the cow. Everything went all right from then. I ran the car ahead, backward, turned it around, etc. It was then 3:30 P. M.

The agent said to me: "Here comes my car after me; I must get back before dark."

He ran my car to the house and backed it into the wagon shed for the night, saying that I could take it out myself the following day, and let him know by 'phone how I got along. I said I would try it and do the best I could. As it was growing cold very rapidly, I thought that the water might freeze, so I ran the water out of the car. The agent agreed to furnish me with a man free until I could run the car. This was my first day's experience.

The next morning I started the car and went out to the race track. I went about 4 miles on the slow gear. Steam came out of the water tank and I stopped the car to let it cool off. I turned off the spark and sat still in the car to see if the engine would not stop. I then pulled out the switch plug, cut off the gasoline and finally got out of the car, but could not get the engine to stop. The agent had told me many things, but I could not think of any about running away, so I looked on for about 5 minutes. Then the motor started running backward and forward, and so on until it stopped.

I looked under the machine and saw that

the water pipe from the pump to the radiator was loose. It should have been fastened to the bottom of the body by a hook. It was not disconnected and it turned on its rubber coupling and lay with the bow downward. The water in the bow had frozen the night before, so the water could not go to the radiator at all. Therefore the cylinder grew red hot and by turning off the spark the engine did not stop. If I had not turned off the gasoline, it would be running yet. It used all the gasoline that was in the carburetor before it stopped. The pipe did not freeze hard enough to burst it. By that time the machine was only warm and the pipe was thawed out. I fastened the pipe back to its place and ran the car 12 miles that day. Because the water did not cool I had to stop every 2 miles to let it cool. There was something wrong, but I could not find where the trouble was. We took the pump apart and found that the pin in it was broken. I will try to explain the pump: The pump is made so that you can draw half the water only. So you will see that half the water was frozen that morning and when I started the motor the ice broke the pin in the pump. The pump could not be drained, so I put a stop cock at the bottom of it, so the water could be drawn out. This ended my second day.

That night I drew the water out of the car and saw that the water part of the machine was all right; but I afterward found I was mistaken. But I was learning.—H. L. C.

BOILER HORSEPOWER

Nashville, Tenn.—Editor MOTOR AGE—How is it that a boiler is rated at a certain horsepower and another double the size is given a lower rating? What is known in the way of data to use to build a boiler to run an engine of a certain horsepower?—K. O. N.

The American Society of Mechanical Engineers' standard of a boiler horsepower is the evaporation of 30 pounds of water in 1 hour from 100 degrees Fahrenheit under a pressure of 70 pounds, gauge. One pound of coal or 10 ounces of oil will evaporate 10 pounds of water at 212 degrees Fahrenheit, not under pressure. It takes about 62 pounds of water for 1 horsepower per hour. This is approximately a cubic foot. Generally boilers are designed with a heating surface of 15 square feet to the horsepower. These values are assuming an efficient design and construction. The boiler size for its power will of course depend entirely upon the successful or unsuccessful adaptation of the theoretical knowledge, to practice.



DEMONSTRATING EFFICIENCY OF FOUR-WHEEL DRIVE

LEGAL SENSE AND NONSENSE

NORTH DAKOTA GENEROUS

North Dakota has recently passed an automobile law which is regarded by northwestern automobilists as fair legislation. It puts few restrictions upon the owners of machines and provides no license fee whatever. The North Dakota law establishes a maximum speed limit for the highways of the state of 25 miles per hour, and within the corporate limits of cities, towns or villages this is cut down to 8 miles. No other limits are put upon the road operation of automobiles, except as to passing animal-propelled vehicles, when the automobilist may be compelled to stop upon signal of the driver of the other rig. Machines must be equipped with at least two lights in front, and must carry a bell or horn. A muffler must also be used on all automobiles. The new law provides a fine of from \$10 to \$50 for violations, with the alternative of imprisonment. The law also makes the operator of a machine liable in civil action for damages to persons or property.

KEYSTONE STATE FIGHT

Failing in numerous attempts to secure a favorable interpretation of the existing law for the government of automobiles and automobiling in the state, Pennsylvania motor vehicle owners, with the help of the Automobile Club of Philadelphia and its counsel, are going to the root of things and expect to so amend the law during the present sitting of the legislature as to do away with its inequalities and injustices. With that end in view there was introduced in the legislature last week by State Senator Charles L. Brown, of Philadelphia, a number of amendments to the present law which, if passed, will go far toward making automobiling in the suburban sections around the larger cities less of a nightmare than it has been in the past.

The first amendment has for its object the establishment of a uniform speed rate throughout the state—maximums of 8 miles in cities and boroughs and a mile in 3 minutes elsewhere—it being particularly specified that when the new law takes effect all township regulations inconsistent therewith shall be rendered null and void. The second amendment provides that arrests for speed law violations cannot be made without a warrant, except in cases where offenders fail to carry a registry number on their cars. The third amendment provides for the recognition, without extra charge, of the automobile tags on non-residents issued by other states, provided Pennsylvania motorists are accorded similar privileges when touring in the state in question.

The passage of the first amendment will mean that the traveling automobilist in Pennsylvania will no longer be compelled, as at present, to acquire a knowledge of the multitudinous and intricate regulations in force in the various townships, confident that so long as he keeps within the 8-mile limit in boroughs, towns and cities and does not exceed a speed rate of a mile in 3 minutes in outlying sections he will not be molested. Under the present obnoxious system a policeman or constable stationed along a lonely road which happens to lie within the limits of a township which has a rigid speed ordinance—passed, probably, for the very purpose of enriching its treasury with the fines collected—may halt any motorist who *appears* to be exceeding the speed

limit, drag him before the nearest magistrate, compel him to pay a fine or, if he purposes fighting the case, keep him in durance until he can get bail. In this connection it is the invariable custom for the magistrate to accept implicitly the statements of the constable, regardless of the fact that the latter is an interested party inasmuch as a portion of the fine goes to the informant and despite the fact that speedometers may indicate that the automobilist was traveling at a rate well within the legal maximum.

RATIONAL STATE LAW

The legislature of South Dakota recently passed an automobile law which provides that all cars must be registered with the secretary of state, who will furnish a number. Change of ownership must be reported, but it will not necessitate the issuance of a new number. Non-resident owners who have complied with the regulations of the state in which they reside need not report to the state secretary. In crowded sections of cities and towns the speed limit is set at 10 miles an hour; while in other parts of towns the speed is 15 miles an hour, while in the country the maximum speed allowed is 20 miles an hour. At curves, crossings, descents and on bridges the motorist is to use his best judgment as to how fast he shall drive. If a person driving a restive horse or other animal signals to a driver to stop, he must do so immediately. If he drives in the same direction he must use caution in passing the horse or other animal, and at all times he shall render assistance, if possible. All cars must be equipped with brakes, a bell, horn or gong, and carry a white light in front and a red light in the rear. Violators of the law may be fined up to \$25 for the first offense, and from \$25 to \$50 for a second offense or imprisoned for not over 30 days. The law also provides that all existing city and town ordinances are void, the state law taking their place, and that the cities and towns have no power to pass rules or regulations referring to licenses or to the use of the highways.

TROLLEYS CONSIDERED FIRST

The automobilists of Detroit have succeeded in having Alderman Korte's amendment to the local automobile regulation postponed indefinitely. A delegation of manufacturers and dealers met the ordinance committee of the city and was able to convince it of the absurdity of the alderman's amendment, which provided that automobiles should not be driven at a greater rate of speed than 8 miles an hour on any streets used by trolley cars.

WILL CO-OPERATE

An automobile ordinance is being prepared for Denver, Col., by Alderman Maloney, but before it is presented to the city council prominent local motorists will be invited to express their opinions and make suggestions concerning the measure. The intention of the alderman is to make the regulations satisfactory to both the automobilists and the public.

WANT LIEN ESTABLISHED

In view of a recent decision of the court that a garage keeper has no lien on an automobile for storage or repairs furnished by him, as has a livery stableman on horses and carriages, the New York Automobile Trade Association has sent to Albany a bill for introduction establishing this lien by statute.

MICHIGAN BILL AMENDED

Owing to the efforts made by Roy D. Chapin, S. D. Waldon, Ned Broadwell and W. E. Metzger, all prominent in Detroit automobile trade circles, the automobile bill presented by Representative Holmes to the legislature of Michigan, has been amended. The motorists went to Lansing last week to meet the house committee and Representative Holmes, and the bill was discussed. Holmes proposed to make 15 miles an hour the maximum rate of speed on country roads, but after hearing the arguments and the opinion of Representative Fisher, the speed limit was raised to 20 miles an hour. W. E. Metzger, during the argument, said that the police department of Detroit had been given instructions not to arrest anybody driving an automobile at a rate of speed of 15 miles within the half-mile city limit or 17 miles outside of that limit, although the ordinance provides a maximum rate of speed of 8 miles within the half-mile limit and 12 miles outside the limit.

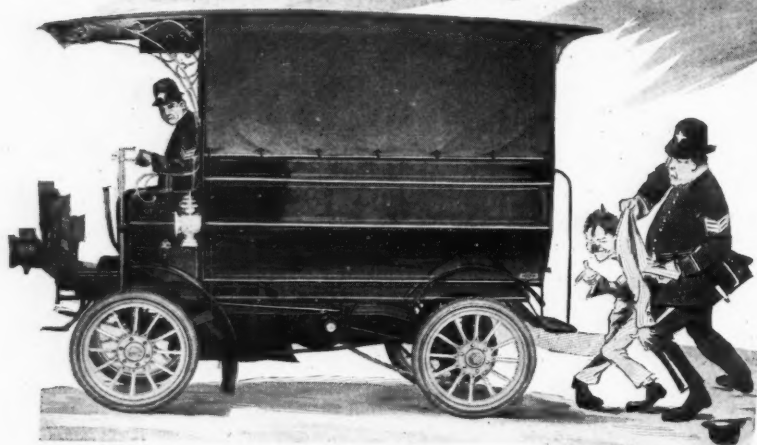
SAXE BILL DISCUSSED

Although they do not wish to make the mistake of counting their chickens before the hatching, New York state motorists, particularly those who took part in the hearing at Albany on February 28 on the proposed Saxe amendment to the state motor vehicle law, have some hope that the bill will die in committee or be killed on the floor of the legislature.

A list of those who argued against the bills contains such names as Scarritt, Shattuck, Hotchkiss and others equally well known to motorists of the Empire state. Some strong arguments were made against the measure, but at the same time it must be said that the motorists felt that the attitude of the joint committee of the senate and assembly was rather unfavorable to the bill. It may be that the fact that no report was made on the bill the next day after the hearing is one reason for the hope the automobile men have in regard to the fate of the proposed legislation. As previously published, the Saxe proposal is to give local magistrates the power to send to jail motorists convicted of a first offense against any one of the twenty-two provisions.

Winthrop E. Scarritt voiced the attitude of all the motoring clubs of the state when he spoke at the hearing. He prefaced his argument with the proposition that the right of the motorist to use the public highway had been established by the New York state courts. Attempts might be made in two ways, he said, to deprive motorists of the use of the roads. One would be for the legislature to pass a law prohibiting the use of motor vehicles. Such an act would be unconstitutional. The other way would be to put in force such drastic laws that no one would dare to operate a motor car. Pointing then to the present law he said during its 9 months on the books it had operated to the satisfaction of all interests. It was a compromise between the radical views of the very persons who are backing the Saxe measure and the views of the automobilists of the state, and when it went into effect it was with the understanding that it should be given a fair trial. Such fair trial, he said, could not be had in nine months. It would be unwise, further contended Mr. Scarritt, for the state to adopt drastic measures that would cripple a business which is becoming so important as the automobile trade.

AUTOMOBILE DEVELOPEMENT



KNOX PATROL WAGON FOR SPRINGFIELD, MASS.

IGNITION CABLE

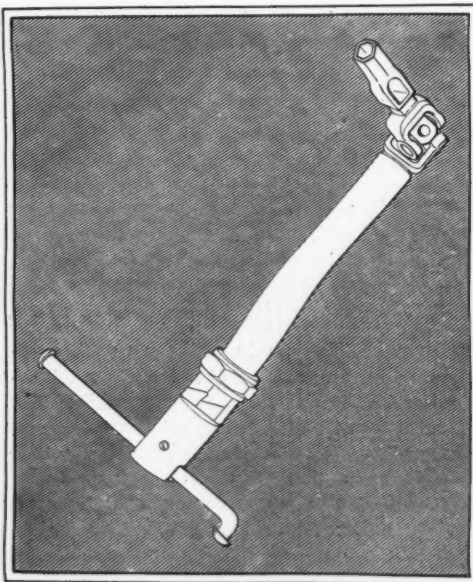
The Packard Electric Co., of Warren, O., is introducing several new forms of insulated cable for automobile gasoline engine ignition systems. One of the principal novelties is a bunched cable for the high tension circuits of multiple-cylinder motors, being a special form in which the different cable leads leave the main insulated trunk at proper points to meet the spark plugs of the different cylinders. The company's combination rubber cable for high tension circuits has been improved to prevent rupture by making it of stranded tinned copper wires covered with three layers of soft rubber, then with coarse weave cotton braid, then two coats of enamel, then a double whip cord braid and finally three coats of enamel, all of the enamel coats being baked. It is said that this cable is elastic and at the same time proof against heat, grease, oil, water and dirt. The cambric high tension cable has been strengthened by the addition of two extra layers of fabric, making altogether eight layers of three-coat enamel tape, two windings, two braids and four coats of baked enamel. The construction of other forms of cable are shown in the company's booklet.

THREE CONVENIENCES

A four-way electric switch, known as the Economy, is being manufactured by the Seidler-Miner Electric Co., of Detroit, Mich. As shown in the illustration, when the connection is placed on the first point, one set of batteries is connected for ignition use; when on the second point, the second set of batteries is connected; on the third point both sets are connected in multiple series; and when on the fourth, or last, both sets are in series. At the left is a point marked "off," which is used when both sets of batteries are cut out. The use of the third and fourth points may be appreciated after both sets of batteries show considerable weakening, for then, by connecting the switch on the third point, the batteries being thrown in multiple series show new life and permit of longer use, a condition which is further obtained by the series connection on the fourth point. If the motor misses fire when the voltage has dropped to, say, .75-volt on the third or multiple connection, by turning the switch on to the series connection it often happens that one-quarter more current can be obtained, which will in most cases prove sufficient to allow a motorist to reach a repair shop or garage.

The Auto Cle, a special form of automobile wrench introduced on the French market a year ago, and now extensively used by French motorists, is of the ratchet type, being provided with a universal joint and a complete assortment of pressed steel sockets, which are intended to provide means for the adjustment of all nuts found on automobiles.

The wrench is hence almost universal in its use, the ratchet working in either direction by slipping the ring up or down on the ratchet face. As only a small space is required to turn



THE AUTO-CLE

the wrench it is possible to use it in confined places.

With each wrench is furnished a full assortment of sockets suitable in sizes for all ordinary rectangular and hexagonal nuts. These are, when not in use, retained in separate cells

in the leather case furnished with the wrench. The Auto Cle is provided with an extension for reaching inaccessible portions within the crank case and is further equipped with two screw drivers and a socket suitable for removing spark plugs. When not in use the handle is folded alongside of the wrench proper. This wrench is manufactured and marketed in America by the Railway Appliance Co., 114 Liberty street, New York, or Old Colony building, Chicago.

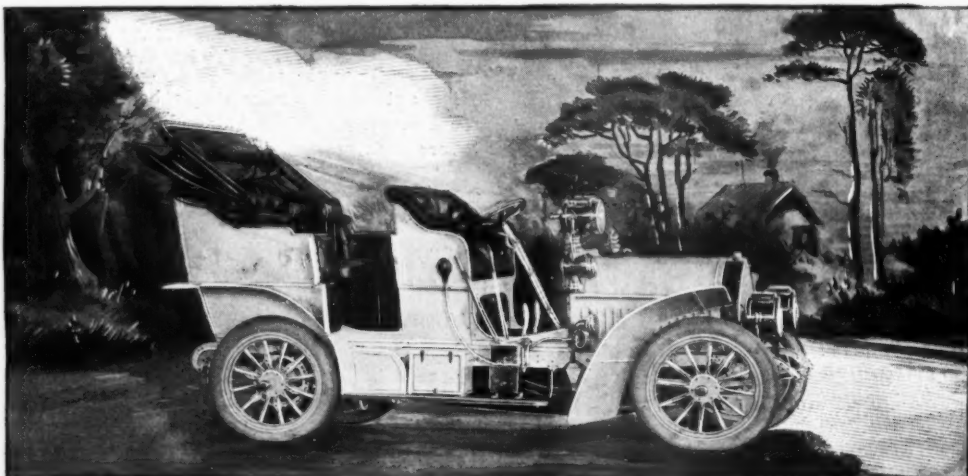
The Imperial motor clock, a timepiece specially designed for automobiles, is being introduced by the Post & Lester Co., of Hartford, Conn. This clock, which is furnished with a heavy burnished brass case of the offset type, has a 3½-inch face and will run 8 days on one winding. The casing is so constructed that the winding and setting may be done from the outside, and it is also dust and water proof.

ORIENT MODEL DE LUXE

The Waltham Mfg. Co. of Waltham, Mass., one of the several firms making four-cylinder tandem air-cooled cars this year, has as its largest pattern the Orient Model de Luxe, a 20-horsepower touring car.

The main frame, of rectangular design, is slightly narrowed alongside of the motor to give a large turning angle needed with a long wheel base. The side pressed steel members, with a 4-inch depth at the center, taper to the front and rear, where the springs are attached. These side pieces are secured together by cross pieces that are hot riveted at each joint. To these cross pieces is attached the pressed steel sub-frame that carries the motor and transmission, the side members of the sub-frame being also tapered from the center to each end. Four semi-elliptic springs carry the main frame, the front pair being 40 inches long and the rear 45 inches. The rear springs are swung outside of the side pieces of the frame, but the front ones are attached by the usual shackles and are beneath the frame side pieces. The springs are in turn attached to the tubular axles by the usual bolts and clips.

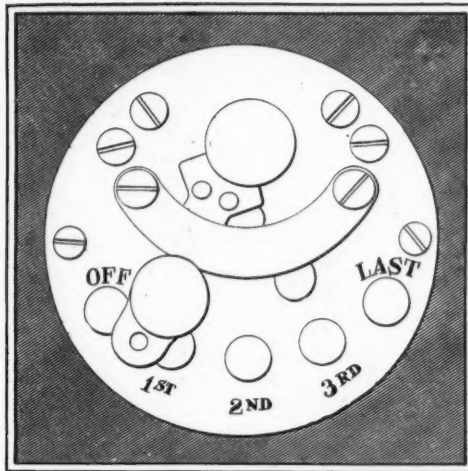
The 32-inch artillery wheels, with 1¼-inch spokes, are fitted with 3½-inch International pattern G & J tires. The car has a 96-inch wheel base and 56-inch tread. Tubular axles



THE LATEST LOCOMOBILE, THE 40-45-HORSEPOWER CAR IN WHITE WITH BLACK TRIMMINGS

are used in the front and rear, the former being of 2-inch and the latter of $2\frac{1}{2}$ -inch diameter. Within the rear tubing are two live rear axles that are keyed to the road wheels at their outer ends and have their inner ends inserted in a bevel gear differential of usual construction. These rear axle drive shafts are made of toughened steel of $1\frac{1}{4}$ -inch diameter and run on ball bearings at their inner ends and long roller bearings at the outer ends. The steering knuckles of the front axle are tapering, of the Lemoine type.

The motor has a bore and stroke of 4 inches and $4\frac{1}{4}$ inches, respectively, and is rated at 20 horsepower at 1000 revolutions per minute. The crank case is so constructed that the lower half may be removed, exposing to view the crank shaft without interfering with any of the running parts. The air-cooled cylinders have horizontal flanges that are square with slightly rounded corners, and on the heads are vertical longitudinal flanges that allow a through air current over the tops of the four



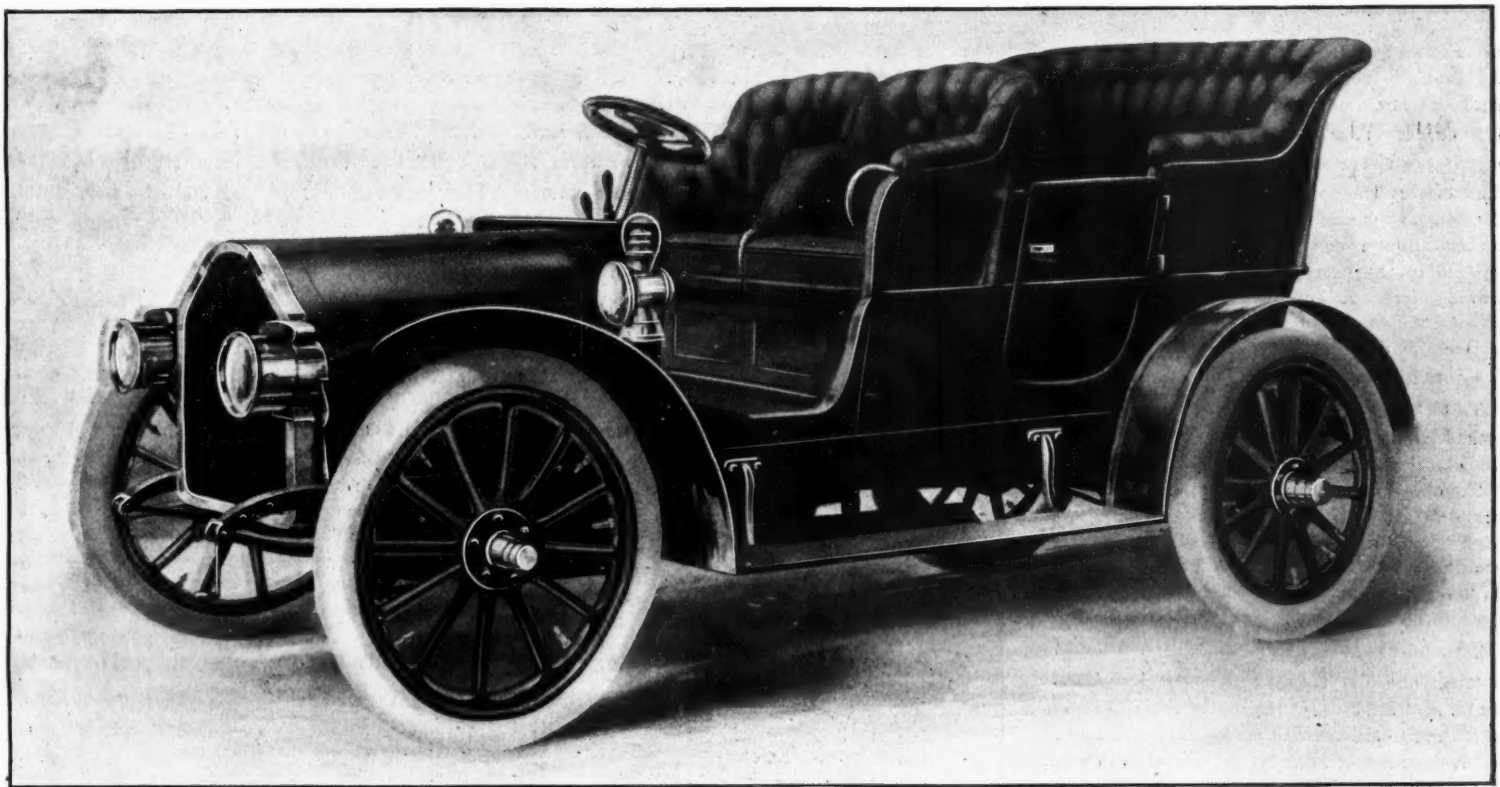
THE SEIDLER-MINER SWITCH

ber with a metal float from which the fuel passes to a stand pipe in the mixing chamber. It rises to within $\frac{1}{8}$ -inch of the top of

cared for by a mixture valve, which opens a by-pass and is connected to a lever on the dash. The amount of mixture admitted to the motor is regulated by the throttle.

Current for ignition is furnished by two sets of dry batteries of four cells each, which are wired to a quadruple vibrating coil set and are in turn connected with the commutator on the motor. The spark plugs are placed in the cylinder heads and each cylinder is provided with a wire support that carries the high tension wires.

For the control of the motor the governor is set to maintain a speed of 300 revolutions per minute, so that when the throttle lever is thrown back the motor speed is thus controlled by the governor, as, for instance, when the car is at rest. To increase the motor speed the throttle is advanced and the car immediately placed in the hands of the operator. Splash lubrication is used in the crank case, which is divided by transverse bridges between the cylinders to prevent the lubricant flowing

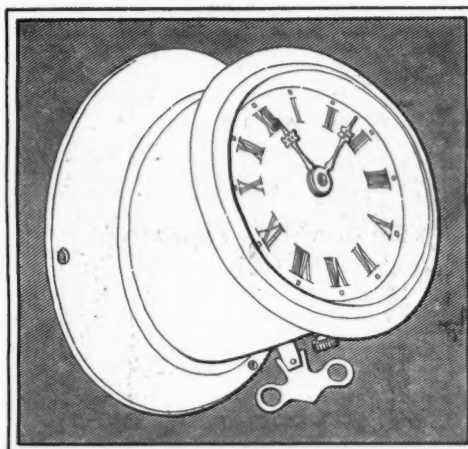


THE ORIENT MODEL DE LUXE

cylinders. The cylinder heads are bolted to the cylinder walls, that are in turn bolted to the crank case. Cooling is further accomplished by the use of a four-blade fan, placed in front of the motor and running on ball bearings. The $1\frac{1}{4}$ -inch drop forged steel crank shaft is machined throughout and runs in five bearings, one at either end and one between each of the throws of the shaft, all of the bearings being bushed with toughened bronze. The cam shaft operating the mechanical inlet and exhaust valves is placed at the left of the motor within the crank case and is operated by enclosed gears at the front end of the motor. Forged steel connecting rods are used with bronze bearings at the wrist and crank pins.

The single carbureter which supplies mixture to the four cylinders is placed alongside of the motor at the right and from it leads a single induction pipe over the top of the motor, branching on the left to the four cylinders. The carbureter consists of a float cham-

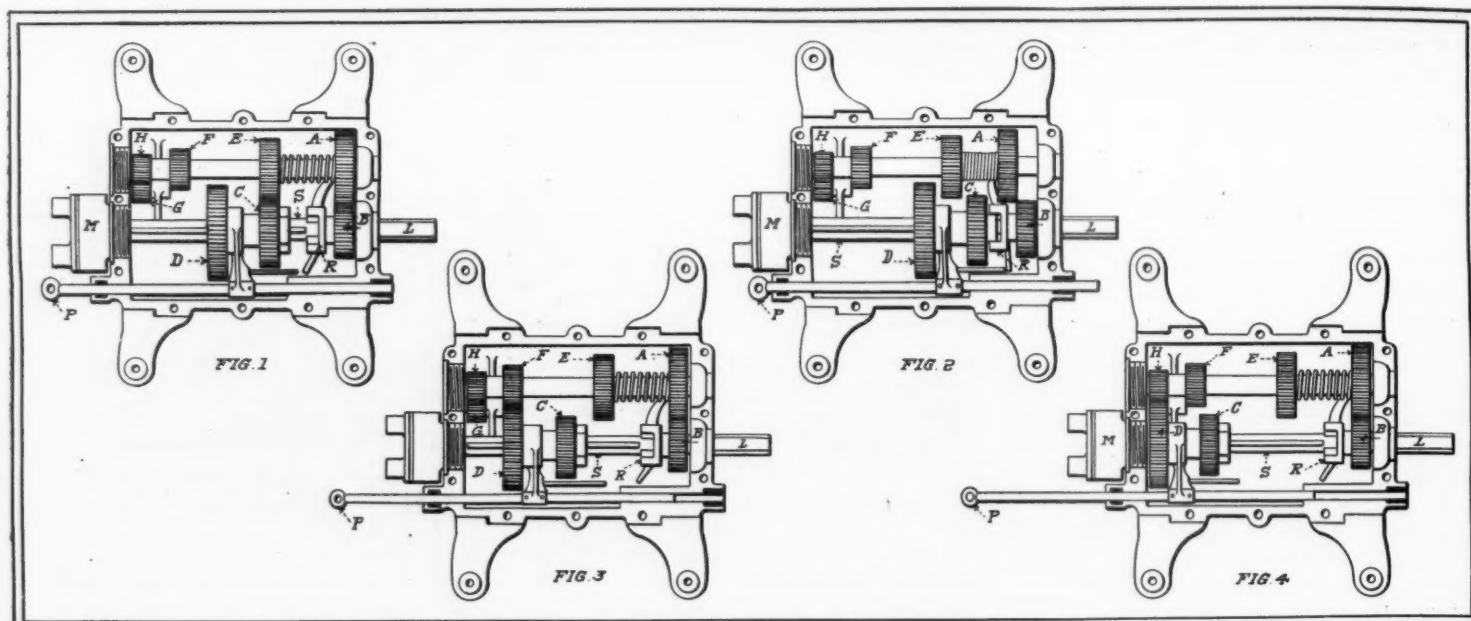
this pipe, over the extremity of which is a beveled screw cap containing small slots through which the fuel is sucked by the in-rushing air. The richness of the mixture is



THE IMPERIAL MOTOR CAR CLOCK

to the front or rear of the case when descending or ascending a hill.

The sliding gear transmission, in which the counter shaft is at left of the main shaft, gives three speeds and reverse with direct drive on the high speed without any gears in mesh. When driving on the other two speeds ahead the reverse pinions are in mesh. Both the main and counter shafts run in ball bearings. In Fig. 1 of the illustration of the gear the manner of obtaining the second speed ahead is shown. The shaft L connects with the clutch and has rigidly secured to it the gear B and the interlocking end teeth R. The shaft S is in line with the shaft L and has one end bearing within the sleeve bearing the interlocking teeth, but is free to revolve when the shaft L remains stationary, or vice versa. On the rear end of the main shaft S is attached the drum M that is flexibly connected by shaft and universal joints with the bevel gear on the rear axle. When the shaft L revolves the gear B does also, being rigidly at-



THE ORIENT TRANSMISSION GEAR IN ITS FOUR POSITIONS

tached, and as the latter meshes with the gear A, which is rigid with the counter shaft, this shaft revolves. The gear E, being rigid with the counter shaft, also revolves and meshing with gear C causes the shaft S to rotate and thus convey the drive to the rear axle. In Fig. 2 the gears are in position to give direct drive on the high speed. The gears D and C are shifted to the extreme right so that the interlocking teeth R lock with those on the gear C. At the same time the gear A is thrown out of engagement with the gear B, thus leaving the counter shaft entirely idle. It can be seen that on this speed the shafts L and S are locked as one, making a through drive from the clutch to the rear axle.

To obtain the slow speed ahead the sliding gears D and C are slid to the left, as shown in Fig. 3, until D meshes with F on the counter shaft, the drive then being from B to A, along the counter shaft, then through F and D and thence to the rear axle.

Two additional gears come into use for the reverse, one, H, being rigid with the counter shaft, and another, G, being an interposed one, which gives the reverse movement. To get the reverse, gears D and C are moved to the extreme left so that D meshes with the interposed gear G. This gear position is shown in Fig. 4.

The drive in this case is from B to A, along the counter shaft, thence from H into G, from G to D and back to the rear axle. The gear H is always in mesh with the gear G.

The primary brake for ordinary use is on the drive shaft at the rear of the transmission case and is operated by the right pedal. On each of the rear hubs is placed an emergency brake connected with a lever at the driver's right, the application of which also throws out the clutch. The clutch may also be thrown out by a pedal at the driver's left.

FULL OF INDICATORS

Frank A. Bostwick, of Chicago, is a tourist who likes to know what o'clock it is, when driving; also, what the elements have in store for him and just what position he occupies in space. Accordingly, he has equipped the dashboard of his White steamer with about all of the indicating devices known to this scientific age. The accompanying illustration indicates the skill and ingenuity displayed in arranging the various instruments.

First comes the searchlight, to chase the

darkness from the path of this moving observatory. At either side of the top of the dash is a tiny electric lamp with reflector to light up the multitudinous dials. The first row of instruments from left to right is as follows: Compass, steam gauge, air gauge, thermometer, barometer. The second row includes a switch board, voltmeter for battery lamps, regulation force-feed oiler, clock, gradometer. Finally come the odometer and speedometer.

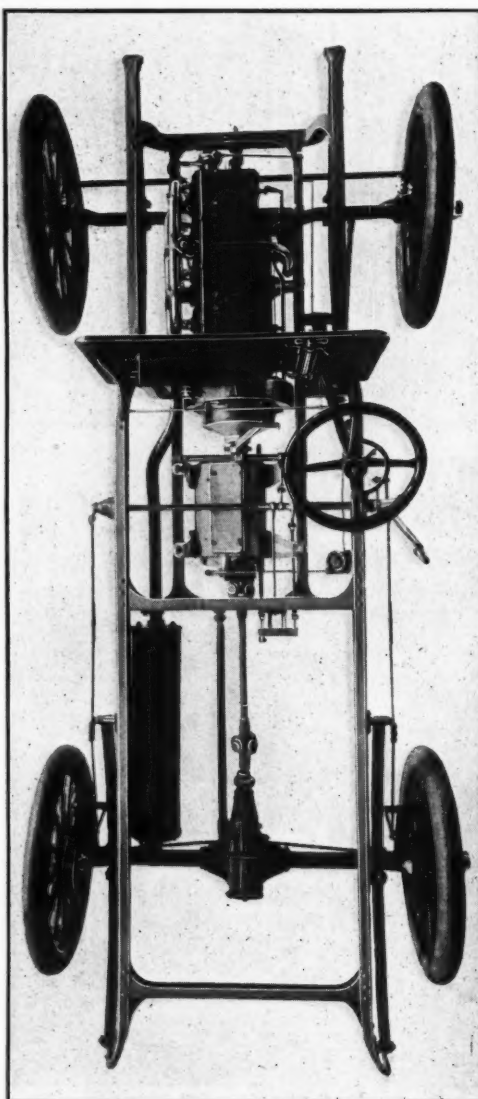
But this does not complete the "supplementary equipment" of the car. At the rear is a powerful steam whistle, the sound of which vibrates over the Chicago prairies like that of the Twentieth Century Limited. The "kid eradicator" consists of a perforated brass tube suspended over the rear step, suitably connected with the coils to the generator. Both the whistle and the "k. e." are operated by pedals which have been fitted within reach of the driver.

Mr. Bostwick last year drove another White, which he had equipped with one or two extra instruments. Mr. Bostwick did all the work on both cars himself, fashioning whatever brackets or connections were necessary in the local White station.

DURYEA'S IGNITER

The New-Dur Exploder is what Charles E. Duryea, of the Duryea Power Co., Reading, Pa., styles his new ignition apparatus for gasoline engines. This device was in constant demonstration at the recent automobile shows and showed its ability to detonate or explode mixtures under varying conditions and to give a wide range of spark timing.

In the illustration the igniter is shown connected with one brush of a triple commutator, the wiring for the other two cylinders, and to the generator, being indicated. Electric current may be obtained from any source, but the igniter is ordinarily furnished for attachment to a regular direct current magneto. The current flows from the generator, when connected by the commutator, to the coil of the magnet and finally, grounding on the shell of the magnet, returns by way of the engine and the ground wire of the generator to complete the circuit. At this moment the magnet instantly attracts the armature and forces the reciprocating spark pin into firm contact with the adjustable sparking point, and so closes the spark circuit. A current is then set up through the coil, which passes to the second binding post, then through the armature and sparking pin to the engine and ground wire of the generator. The entire current from the generator is sent through the coil because of the close winding of the magnet and the consequent high resistance. When the commutator breaks the magnet circuit the armature, being released, flies back quickly under the action of its spring and hitting the head of the spark-



PLAN OF ORIENT CHASSIS

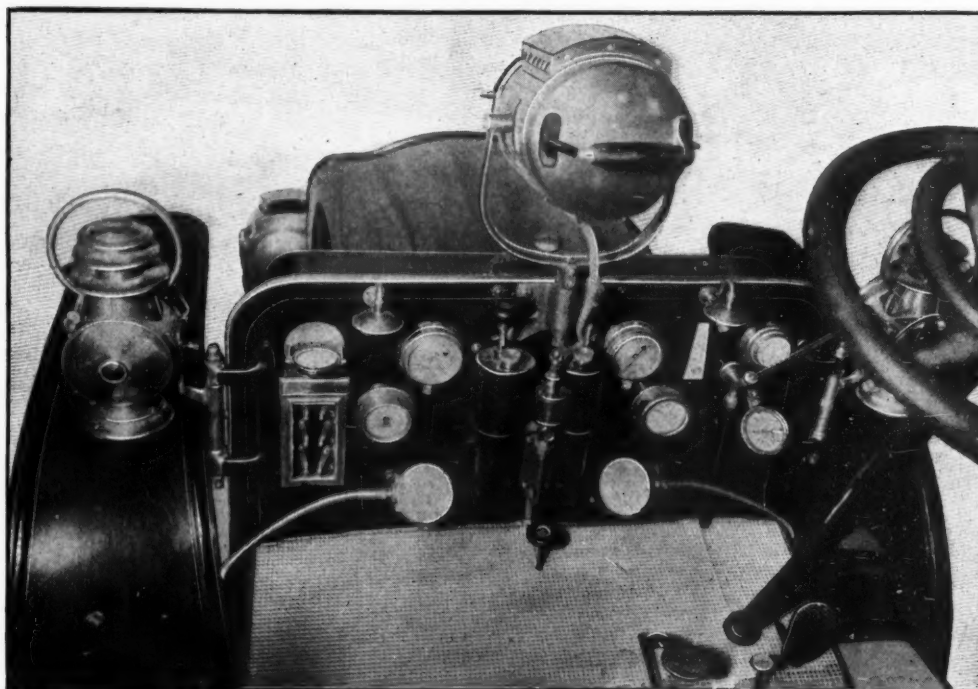
ing pin forces it out of contact, with a very great velocity, which is due to the lightness of the needle and the rapid movement of the armature. The spark does not occur until the magnet circuit is broken at the commutator, and this magnet circuit simply closes and breaks the sparking circuit.

Conspicuous in this hammer-blow, make-and-break device is the lightness of the moving part, which allows of rapid movement. The whole current strength can be used to close the contact, and because magnetic pull increases inversely with the square of the distance the contact is firm, even with the presence of oil and soot. When in contact a small amount of current suffices to hold the armature because of the short distance and the strong magnetic pull. Hence most of the current is permitted to enter the coil, which may be well saturated, meaning a good spark with a comparatively weak current. When the magnetic circuit is broken all of the current is sent through the coil, charging it as the magnet discharges, while the discharge impulse of the magnetic circuit is also thrown into the coil, giving a compounding effect.

CARS OF BUSINESS

The Synnestvedt Mfg. Co., of Pittsburg, Pa., which has a good-sized plant at 4117 Liberty avenue, is making extensive preparations for the manufacture of electric delivery wagons and busses. Last summer the company made an electric bus which was sent to Atlantic City, where it remained all summer taking guests to and from the hotels and trains. The machine was satisfactory and another was lately built, with several alterations which have been found to improve the car. The car was shipped to Atlantic City last week. The Synnestvedt company has also secured contracts from several hotels in Canada. It is now preparing to make delivery wagons and other cars for commercial purposes. Two years ago such a venture in Pittsburg would have been ridiculed, but the demand for business automobiles now fully warrants the project.

The bill which was recently introduced in congress to grant a franchise to the Washington Electric & Railway



BOSTWICK'S MUCH-EQUIPPED DASHBOARD

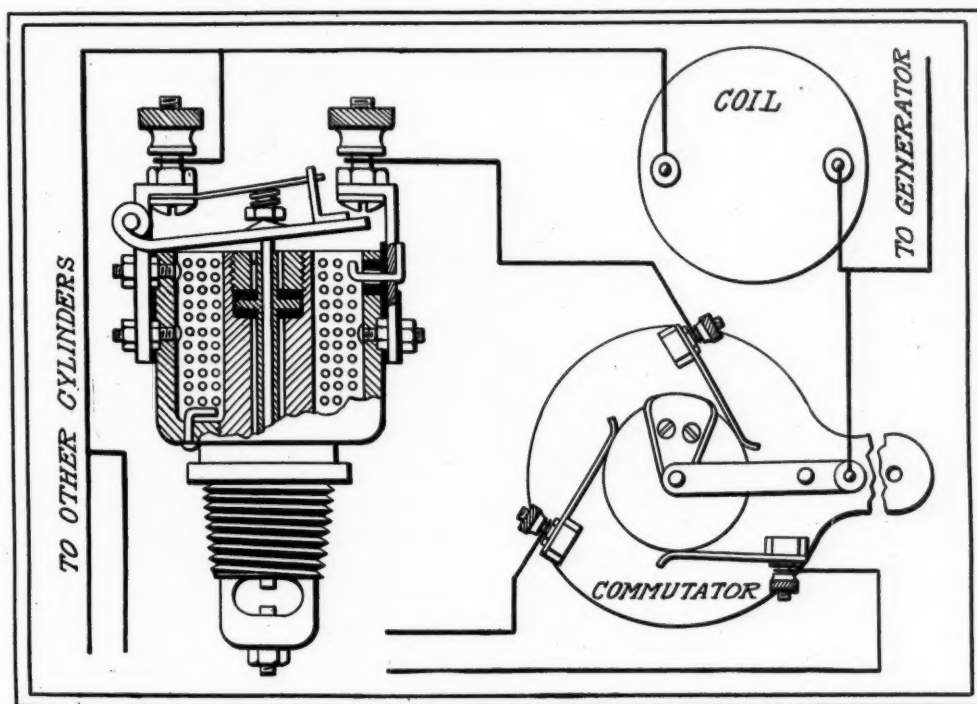
Co., to operate a line of automobiles on certain streets of Washington, D. C., has attracted considerable attention and it now appears that the project is of greater magnitude than was at first supposed. The district commissioners, to whom the bill was referred, have received a letter from General Harries, vice-president of the company, in which he sets forth the plan of operations of the proposed line. The automobiles would be used simply as feeders for the carlines operated by the company and would answer the purposes of cross-town street car lines. "We expect," says General Harries, "the vehicles will have to be commercially practicable, and will, therefore, be much smaller and lighter than many now running on the streets of Washington. We expect ours to have a seating capacity of about twenty-four people and be operated by electric storage batteries. The measure is not viewed by us in any sense a profitable proposition, but is regarded as in the public interest and as being an excellent and altogether

unobjectionable method for the measurement and development of traffic along streets where railroad construction is not now practicable." It is expected the commissioners will make a favorable report on the bill to grant the desired franchise.

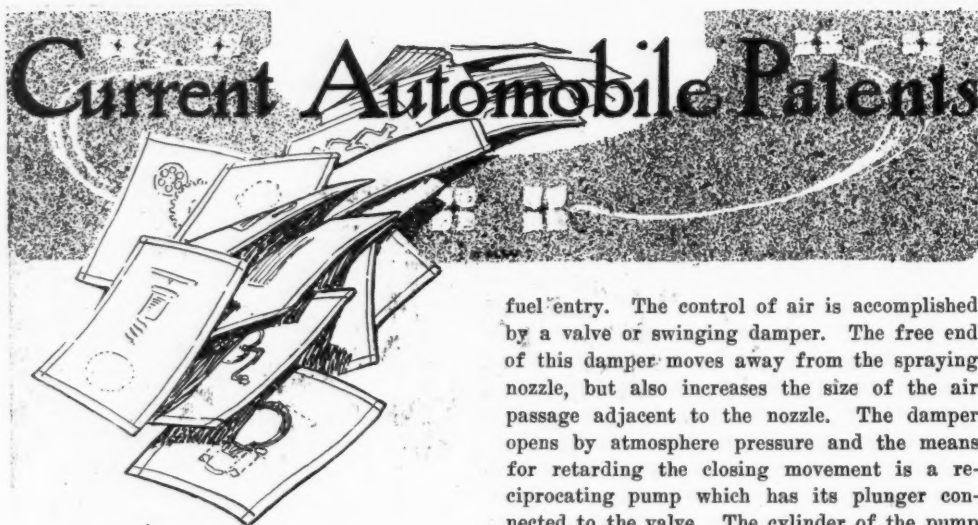
The commercial use of the automobile was exemplified in a most gratifying and practical manner in Pittsburg last week by the experience of the Allegheny County Light Co., which last year bought a White steamer for its manager and chief engineer to drive from one plant to another. The car was sent one afternoon to Washington, Pa., where a bad break had occurred. The next afternoon it was rushed off to East Pittsburg, 10 miles away in one direction, and then hurried back to Ben Avon, 9 miles from the city in an opposite direction. A repair crew was loaded into the automobile both times, and the car was on the scene of the accident in minimum time. Before it got to Ben Avon another call came in from Rankin, and in order to get the damage repaired with the utmost speed, the company ordered out a car from the garage of the Keystone Automobile Co. These calls, if the manager and engineer with the repair crews, had driven by harness over the ground or gone in street cars or on trains, would have each consumed a full half-day, whereas with the automobiles the three breaks were repaired before night.

"POURS PETITS INVENTEURS"

Ninety-seven intending exhibitors have been allotted space at an exhibition soon to be held in Paris of articles made by inventors and other minor automobile developers who could not afford to exhibit at the big French automobile show. The exhibition is promoted by l'Auto, which intends to make it an annual affair, and if possible secure the support of the various automobile boards of trade and of the Automobile Club of France. It is expected that many novelties of value to the industry will be shown, which otherwise might never be introduced. Among the exhibits are to be wheels, rims, tires, anti-skid devices, carbureters, spark plugs, motors for automobiles and motor cycles, motor boats, bells, whistles, transmissions, brakes, etc.



THE DURYEA IGNITER AND ITS WIRING



HYDRAULIC SPEEDOMETER

Letters patent No. 783,679, dated February 28; to Charles Gaille, of La Perreux, France.—In this speed-indicating device a rotary circulation pump, driven from a road wheel of the automobile or other vehicle, draws water from a tube or reservoir and eventually returns it to this reservoir through a piston valve that is held against the water pressure by a helical spring. Between the pump and the piston valve is inserted the end of a tube that connects with the pressure gauge placed on the dash and which indicates the vehicle speed. The faster the vehicle travels the faster will the pump circulate the liquid, the greater will be the pressure on the piston valve and on the pressure gauge. The pump has the usual flexible shaft connection with the road wheel.

BAFFLE PLATE MUFFLER

Letters patent No. 783,835, dated February 28; to James G. Heaslet, of Philadelphia, Pa.—In this muffler a cylindrical central chamber has secured around it a series of alternately placed large and small circular plates. The outer shell of the muffler connects the peripheries of these plates, giving the exterior of the muffler a corrugated appearance. In these plates are transverse perforations, those in the larger plates being near their circumferences and those in the smaller ones being near their centers. At the rear end of the central tube are numerous perforations that allow the exhaust gases after passing through the tube to pass back through the perforations in the circular plates, and to the final exhaust.

STEERING WHEEL DRIVE

Letters patent No. 783,791, dated February 28; to Leon W. Campbell, of Woonsocket, R. I.—This invention relates to a driving connection with the front wheels of an automobile, as for a four-wheel drive. The front axle consists of a driving shaft with a central sprocket for either chain or shaft drive from the power plant or transmission, with partially spherical driving gears on the ends of this shaft. These gears mesh with smaller gears on the short axles that bear the road wheels, the gears on these shafts being placed so that they are vertically in line with the pivotal points of the steering yokes.

COMPENSATING CARBURETER

Letters patent No. 783,902, dated February 28; to Ralph Shipman, of Sunbury, Pa.—In this carbureter there is an air passage that is normally open for the free entry of air to the mixing chamber, in which is the nozzle for the

fuel entry. The control of air is accomplished by a valve or swinging damper. The free end of this damper moves away from the spraying nozzle, but also increases the size of the air passage adjacent to the nozzle. The damper opens by atmosphere pressure and the means for retarding the closing movement is a reciprocating pump which has its plunger connected to the valve. The cylinder of the pump has inlet and outlet openings connecting with the gasoline tank. A check valve controls the inlet opening to the pump cylinder, while there is a valve which regulates the flow of fluid through the outlet opening of the pump cylinder.

RUNNING GEAR FACTORS

Letters patent No. 783,950, dated February 28; to Norman T. Harrington, of Detroit, Mich.—The inventor deals with the attachment of springs, radius rods, brake drums and housings to rear axles. A pair of distance rods extend from the frame to the axle, one of which is rotably fixed and the other revoluble, in relation to the housing. The housing surrounding the axle is revoluble in relation to the springs, which are regular side springs.

Letters patent No. 783,547, dated February 28; to Charles Schmidt, of Warren, O.—In a motor vehicle frame the inventor uses two cross pieces in the frame, to one of which is attached rigidly one end of a horizontal motor while to the other, the opposite end of the motor is pivotally connected. Arrangement is also made for supporting the transmission gear case similarly.

APPURTENANCES

Letters patent No. 783,718, dated February 28; to William E. Bryant, Robert Davidson and George M. Wolcott, of Detroit, Mich.—This device, which is a sight-feed lubricator, consists of a condenser, an oil reservoir, a steam chamber for heating the lubricant in this reservoir, and a number of sight feeds mounted on the oil reservoir. In the lubricator there is a separate oil discharge passage for each sight feed and also a steam passage con-

necting each discharge with the condenser.

Letters patent No. 783,748, dated February 28; to William S. Glines, of Bridgeport, Conn.—This device comprises an automobile signal horn that is blown by exhaust taken from the muffler pipe. In the latter is placed a check valve, which permits a portion of the exhaust to be trapped and carried to the horn through a small tube. In this tube is a valve operated by a push button at the side of the seat.

Letters patent No. 783,935, dated February 28; to Rhessa G. Du Bois, of South Orange, N. J.—The device is an ordinary type of swinging search light, which is provided with signal glasses for casting side lights. The cylinder of the lamp is supported on trunnions with hollow axes in which glasses are placed for the emission of side lights in opposite directions.

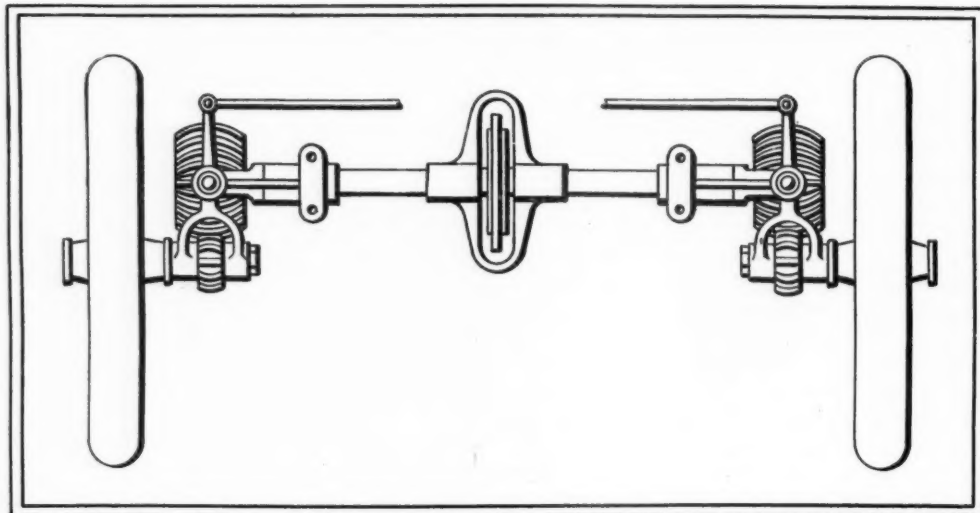
THREE-POINT SUSPENSION

Letters patent No. 783,599, dated February 28; to Jesse Warrington and Howard C. Marmon, of Indianapolis, Ind.—In this invention, which refers to motor car running gears, are two three-point suspension frames. One of these supporting the motor and transmission, has two front suspensions at the top of the front elliptical springs and one rear suspension, where the drive shaft from the motor connects with the gear casing on the rear axle. The other frame, which is rectangular, carries the body of the car, and at the rear is supported by the two elliptical springs, but at the front has a one-point support on a central trunnion, on the cross member of the sub-frame that carries the motor. Thus the sub-frame has the single suspension at the rear and the main frame has its single suspension in front.

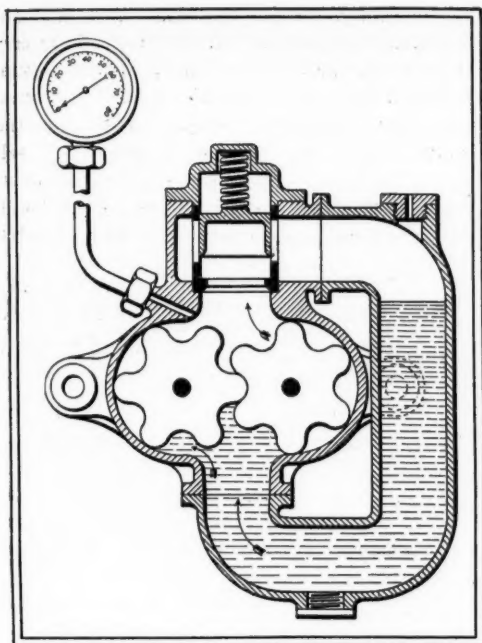
TIRE NOVELTIES

Letters patent No. 783,858, dated February 28; to Alfred Frey, of Paris, France—The invention consists of a protecting cover for pneumatic tires which is secured to the tire so as to leave an annular space between the cover and the tire. The tread of the cover is reinforced by a flexible tread provided with openings communicating with the annular air space. The tread is provided with metal projections.

Letters patent No. 783,833, dated February 28; to Leonard Harris, of London, England—This invention relates to a pneumatic cushion which may be placed on an automobile between the axles and the vehicle frame, to serve as a bumper. On the top of the axle and on the under side of the frame are placed convex metal holders, similar in cross section to a clincher rim, and a pneumatic chamber is



CAMPBELL'S STEERING WHEEL DRIVE



CAILLE'S HYDRAULIC SPEEDOMETER

placed between them, being secured to each in the same way that a clincher tire is attached. An air valve is placed in the metal holder that is attached to the frame.

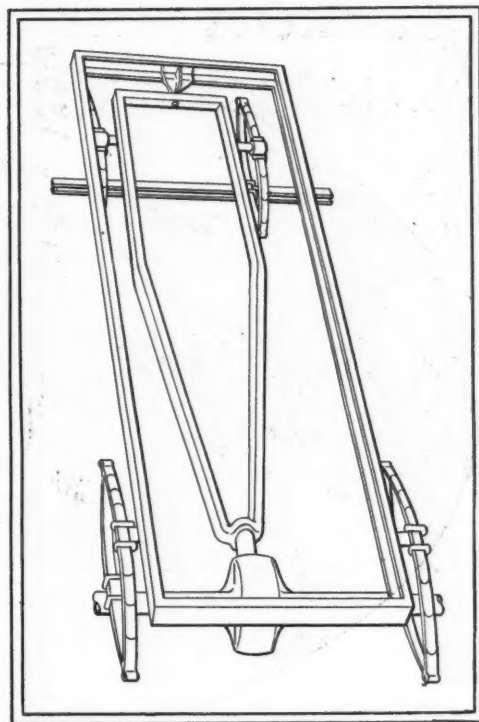
Letters patent No. 783,926, dated February 28; to Mary E. Brooke, of Denver, Col.—In this invention is a composite rubber tire comprised of a combined rubber and fabric cover similar to the outer covering of a pneumatic

tire, and within which is placed a composite tire with a cushion. The tire may be attached to concave rims of clincher type and is secured to the rim by two continuous wires placed in the lips of the tire.

Letters patent No. 783,469, dated February 28; to Maximilian C. Schweinert, of West Hoboken, N. J., and Henry P. Kraft, of New York—This is a clamping device for pneumatic tires, in which a nut has a spiral washer swiveled to it so that the outer face of the washer extends beyond the nut. To the other end of the nut is a sheet iron extension, which covers the end of the lug bolt, on which the screw threading is interrupted by a reduced central portion slightly longer than the nut. The utility of the device consists in that the lug may be released by unscrewing the nut, but that the latter may fall to the end thread on the lug stem without dropping from the bolt unless intentionally unscrewed.

Letters patent No. 783,720, dated February 28; to Frank E. Case, of Canton, O.—In this tire invention is used an outer envelope within which is an inner tube holding a resilient rubber ring, whose outer part is solid while the inner portion is porous. The inner surface of this ring rests upon the inner tube, but the outer surface is some distance removed, leaving an annular air space. In the inner side of the ring are annular grooves and radial holes that communicate with the air space.

Letters patent No. 783,793, dated February 28; to Charles Miller, of Binghamton, N. Y.—In this tire device an outer casing contains a



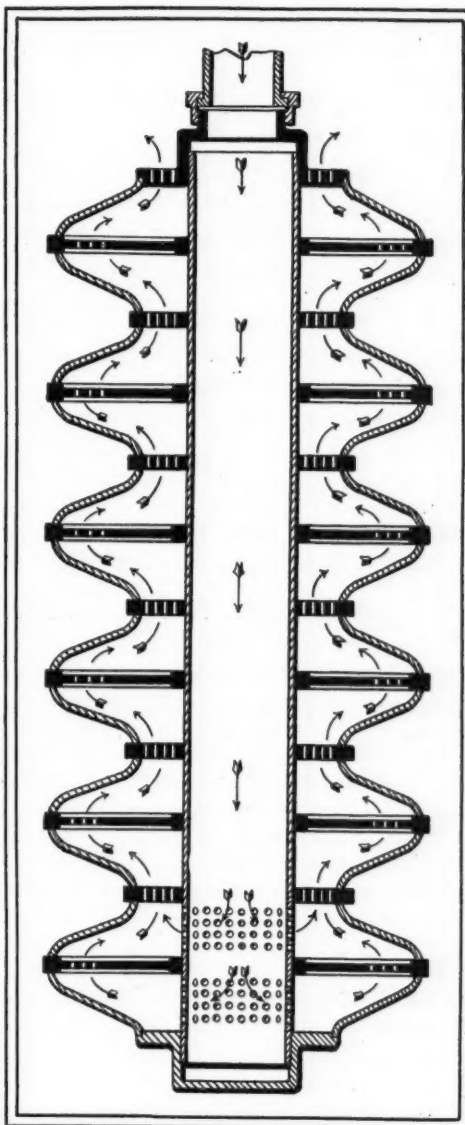
MARMON THREE-POINT SUSPENSION

resilient core, with a longitudinal partition. The tire is attached to the rim by two exterior metal clamps and by interior clamps at the base of the longitudinal partition, the bottom of the core and outer casing being thus forced against the outer clamps.

LITERATURE

Cassell & Co., Ltd., of London, Paris and New York, have issued a new edition of the *Automobile: A Treatise on the Evolution and Construction of Modern Motor Cars*. It is edited by Paul N. Hasluck, and contains 832 pages, with 804 illustrations. The first edition of this work was an amplified translation of a French book by Gerard La Vergne, but the new edition has over 500 pages of original matter written especially for it. The sections which refer to typical constructions are the most interesting, as most of the straight descriptive matter refers to European machines. There are chapters on the evolution of the automobile, motive power agents, steam boilers and engines, carbureters for gasoline engines, gasoline engines and their factors, typical motors, storage batteries and electric motors; steam, gasoline and electric motors compared; traction resistances and the determination of power needed; transmission of power to driving wheels; axles and steering gear; wheels and tires; springs, frames and bodies, brakes, lubrication, typical steam carriages, typical gasoline carriages; typical electric and gasoline-electric carriages; motor cycles, tabulated results of automobile trials and the application, efficiency and further progress of the automobile.

An interesting pocket booklet has been issued by Andrews, Keenan & Blauf, automobile mechanics and engineers of San Francisco, Cal., its title being *Useful Information to Autoists*. The publication is especially meritorious because it gives in condensed form practical information for the motor car user, which generally appears in long and elaborate form in special publications. Batteries, spark plugs, coils, carbureters, gasoline and oil are the topics discussed in the different chapters.



HASLETT'S MUFFLER

NEW COMERS

Newark, N. J.—Simplex Co.; capital \$10,000; to make electrical appliances. Incorporators, Maurice C. Rypinski, John M. Lansden and Charles Nilsson.

East Orange, N. J.—American Automobile Association. Incorporators, Elliott C. Lee, Charles H. Gillette, George C. Farrington.

Cleveland, O.—Central Automobile Co.; capital \$12,000. Incorporators, T. T. Long, A. B. Wiel, William S. Furze, Ralph J. Venning, A. H. Smith and Wallace I. Knight.

Chicago, Ill.—Superior Automobile Co.; capital \$2,500. Incorporators, Richard H. Mather, Willis H. Hutson and Benson Wright.

New York, N. Y.—Auto Mail & Delivery Co.; capital \$150,000. Incorporators, Charles J. Warner, Frank H. White and John Finck.

Newark, N. J.—Reo Automobile Co.; capital \$50,000. Incorporators, Frederick E. Hodge, Thomas P. Gould and Isaac D. Clark.

Brooklyn, N. Y.—Leavitt Motor Car Exchange; capital \$1,000; to deal in automobiles. Incorporators, R. J. Leavitt, M. R. Leavitt and M. P. Leavitt.

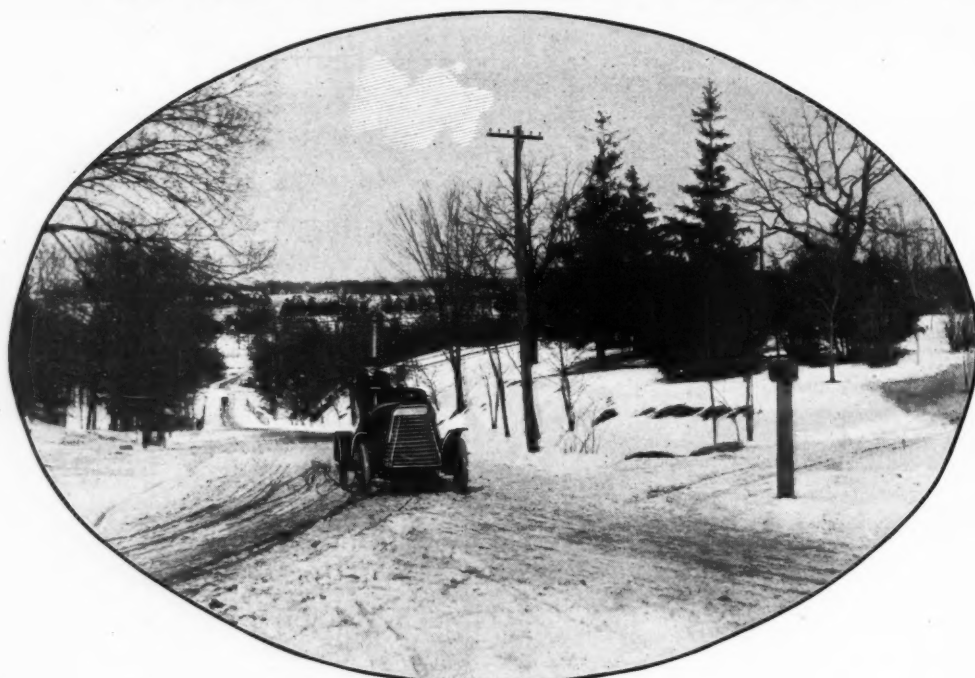
Trenton, N. J.—Porcelain Electrical Mfg. Co.; capital \$25,000. Incorporators, Charles A. Secor, William L. Peacock and Frederick R. Brace, Jr.

Paterson, N. J.—Paterson Automobile Exchange; capital \$10,000. Incorporators, George M. Russing, E. de Witt Carlough and Arrilla I. Carlough.

Des Moines, Ia.—Riddell Automobile Co.; capital \$25,000; to deal in automobiles and sundries. Incorporators, W. J. Riddell and M. E. Riddell.

Cleveland, O.—Automobile Engineering Co.; capital stock \$50,000. Incorporators, R. J. Venning, B. la Pierre, G. H. Cann, F. R. Marks, Joseph Ledwinka.

FROM THE FOUR WINDS



WINTER MOTORING IN NORTHERN ILLINOIS

Ahead of New York—At the recent show held at Olympia, London, the paid admissions amounted to 150,070 for 7 days, an average of 21,438 per day.

Minneapolis an "Old-Timer"—The first automobile ever seen on the streets of Minneapolis, Minn., came into the Minnesota town the first week of April, 1896. It was an electric vehicle from Chicago.

No "Dubs" Allowed—The Society of Automobile Mechanic-Drivers which was organized in England some time ago requires that in order to become a member of the association a driver must have had at least 3 years practical and technical experience. Examination for membership is held once a week.

Plan Country Boulevard—The borough of Oakmont, one of the prettiest spots around Pittsburg, is expected to provide for the issuance shortly of \$50,000 in bonds for the improvement of Hulton road, which leads by the Oakmont golf grounds. This done the borough would have one of the finest and most popular automobile drives in the country.

Perambulating Theater—The latest adaptation of the automobile in France is the automobile cinematograph. It is an immense vehicle which can be transformed into a large truck. About thirty people can get inside of the room and view moving pictures. It is reported that the owner of the machine will travel all summer through France, having found the undertaking profitable.

More Than King—King Alfonso of Spain is causing the government and city authorities a great deal of trouble on account of his fast driving and disregard of the automobile regulations. Recently he collided with an electric street car, and his automobile having been damaged, suit was started against the street car company. The mayor of the district in which the accident occurred tried the case and decided against the king, also indicting him for violating the speed regulations, for not carrying the required number on the car and for not having paid the automobile tax. The case was then referred to

the mayor of Madrid for further action. It is said that the government authorities were amazed at the nerve of the rural mayor and have advised him to resign, which he refuses to do.

Important Revenue—During last year the provincial taxes on bicycles and automobiles in Belgium yielded \$376,428 to the authorities. Of this amount \$35,430 was for automobiles.

Initiating the Danube—In connection with the automobile and motor boat show which will be held in Vienna, Austria, this month, a motor boat race has been arranged. It will be a 10-miler on the Danube, probably on March 19.

By 100-Per Cent Jumps—It has been estimated that 3,544 automobiles were built in Great Britain during the business season of 1903-1904; during the previous season the production amounted to 3,561 cars, while the season before that only 1,700 cars were made.

Mutual Insurance—A new automobile insurance company on the mutual plan was formed in England a few weeks ago. The insurance policies cover accidental damage to the car but not to tires, lamps or tools. They also cover fire damage. The maximum of insurance will be \$2,500. No member will be liable to assessments of more than 7 per cent per year of the cost of his car when new.

Samaritan Motor Car—The Humboldt Standard, of Eureka, Cal., was recently helped by an automobile, in the production of its regular daily edition, when the electric power used for operating the presses and linotype machines broke down at 2 o'clock in the morning, just as the front page of the paper was being printed. Upon inquiring at the power house it was learned that it would require several hours before the trouble could be remedied. While the newspaper men were wondering if the paper would be ready for the regular morning distribution, N. H. Pine, a local motorist, passed in front of the office. He stopped his Oldsmobile in order to inquire why the building was dark and when he was informed he said he could furnish the neces-

sary power with his machine. His proposition was accepted and within a short time the presses and the linotype machines were again working.

Prophets Without Honor—Ten transportation companies of London, England, are reported to have placed orders for automobile buses. Ninety per cent of the orders have been given to foreign manufacturers.

Tambourine Motoring—Banker Bros. of Pittsburg, furnished the automobile which carried Miss Eva Booth through the streets of that city recently in the big parade of the Salvation Army, of which she is the head in the United States.

A La Mode Medics—Buffalo physicians are becoming more and more addicted to the automobile as a business vehicle. Nearly 100 doctors are driving Pierce Stanhopes and a large number of other runabouts are owned by doctors in that city.

Dogs Ahead of Masters—James Gordon Bennett has donated an automobile ambulance to the dogs' hospital of Gennevilliers, near Paris. The car is used exclusively for the purpose of picking up wounded dogs in Paris and the suburbs and to call to get them when requested.

Woman Struck—Titus de Bobula, who last summer was charged with manslaughter for having run down a woman at Duquesne, Pa., has recently been sued by Carrie J. Murdock for \$10,000 damages for injuries alleged to have been received last September from his automobile striking her carriage and hurling her to the ground.

Tough on Pope-Toledoans—The police department at Toledo is trying to rid the city of mile-a-minute motorists and has given specific instructions to officers to be on the lookout for them. Collingwood avenue, in view of its length and beautiful roadway, affords one of the best places for automobile scorchers and is closely but vainly watched as the automobilists are on the lookout themselves.

Are Boulevardiers—According to a Frenchman residing in Buenos Ayres, Argentine Republic, there are about 500 automobiles in that city, which has 900,000 inhabitants. The streets and boulevards are in good condition but outside the city limits it is hardly possible to travel with an automobile. This is the reason most of the cars used are electric vehicles. Among the gasoline cars the Fiat predominates.

Better Than Europe—Ex-Congressman Foote, of New York, and Mrs. and Miss Faulkner, wife and daughter of former United States Senator Faulkner, of West Virginia, are touring in California in a White steamer. Recently they went from Pasadena to San Francisco. They say this particular road of California compares favorably with anything in the way of roads and scenery they encountered in extensive European touring. The roads were in bad condition for part of the journey between the two California cities. According to Mr. Foote, on the first day out 225 miles were run, while on the following day only 100 miles were covered. "With favorable legislation and improvement of the roads, California with its magnificent scenery and fine climate should draw tourists from all over the globe and should bring here the class of people that now spends its vacations touring in Europe," says the New Yorker.

Forty-two Cylinders—There were seven six-cylinder cars of four makes at the recent British show.

Motor Cabs in Denver—The Denver Omnibus and Cab Co., of Denver, will soon add an automobile transportation service to its business.

Tide Is Turning—Dave Hennen Morris, president of the Automobile Club of America, who has been hitherto addicted solely to European cars, has ordered a Simplex from Smith & Mabley, Inc.

Pittsburg in Line—The fire department of Pittsburg is considering the purchase of an automobile for the use of Chief Miles Humphries in going to and from fires. Many of the department and city officials have seen the workings of automobiles in such use in eastern cities and are anxious to try them this year in Pittsburg.

Roads Too Slippery—The first speed trial over the Philadelphia-Atlantic City course took place last Sunday, when Johnny Fisher, the ex-cyclist, in a 40-horsepower Pope-Toledo failed in an effort to lower the existing record. A thaw rendered the road so slippery that he was compelled to travel slowly over

the last 15 miles of the route. On the return trip he came within about 5 minutes of equaling the record for the 58 miles, 1:40, held by Pearce's 40-horsepower Mercedes.

In a Home-Grown Car—Dr. Charles H. Van Bergen, of Buffalo, has ordered a Thomas Flyer with which to make an extensive trip of Europe. He will visit England, France, Germany, Spain and Italy.

Whipple Reimbursed—Harlan W. Whipple has had returned to him by the West Orange, N. J., authorities the \$5,000 he deposited to insure the township against damage suits arising from the Eagle Rock Hill climb. The Jersey men had the nerve to propose to hold this deposit for 5 years, but a threatened suit brought them to their senses.

Many Cars Burned—In the recent fire in Long Acre, the automobile row of London, England, twenty-two automobiles and supply stores suffered. One building, which was occupied by Cannstat Mercedes, Ltd., the Ariel Motor Co., and the Swift Motor Co., was completely destroyed and five Mercedes, eleven Ariels, eleven Swifts and forty-five other cars were completely burned. Many dealers started to move out all their cars

when the fire seemed to become uncontrollable and were thereby wise as within a short time some of these buildings were also completely wrecked.

Six Millions for Roads—An appropriation of \$6,356,232 is provided for by the new good roads bill recently introduced by Senator Sprout into the Pennsylvania legislature.

Rah, Rah Boys There—Of the thirty-five persons who were at the opening lecture of the automobile school of the Y. M. C. A. of New Haven, Conn., there were several students from Yale university.

Cabbies Desert the Horse—Cab drivers of London, England, are reported to be doing little business owing to the steadily increasing number of motor buses and motor cabs which are being put in use in the metropolis. The president of the cab men's union says that a new syndicate has been formed with a capital of \$100,000 to run motor cabs in the city, and that shares in the enterprise are being offered to the members of the cabbies' union. It has been decided that the cab men shall learn to drive motor cars, and their headquarters will be used as a training place.

MANUFACTURERS' MISCELLANY

High and Low—A company is to be formed at Syracuse to manufacture a compound gasoline engine.

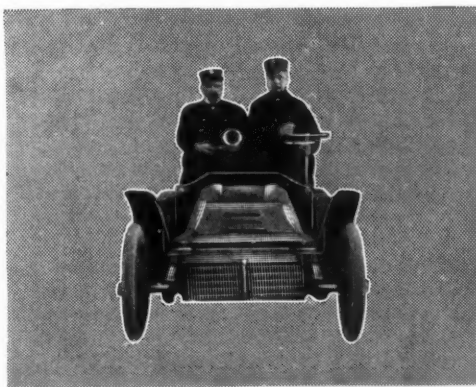
Thinks Missouri Needs Polish—The Pan-American Polish Co., formerly located in East Cleveland, O., has moved to 4705 Olive street, St. Louis.

White Exports—It is reported from London that seventy-six White steamers were received during the month of January by the British agents of the White Sewing Machine Co., of Cleveland.

What Does Detroit Say?—According to advices from Pontiac, Mich., a large automobile plant now located in Detroit may be moved to Pontiac, because transportation facilities from that town to the east and the west are found to be better than those of Detroit.

Lost His Name—The A. L. Dyke Automobile Supply Co., of St. Louis filed an injunction sometime ago against A. L. Dyke, to prevent him from using that name as a concern title. A. L. Dyke has now re-incorporated under the name of the Automobile Exchange & Supply Co., A. L. Dyke, manager.

Trebert Mix-up—The Trebert Gas Engine Co., of Rochester, N. Y., which was incorporated August 22, 1903, has applied for an injunction and damage suit against the Trebert Auto and Marine Motor Co., which was incorporated May 13, 1904, and which is also located in Rochester. On February 19, 1904, H. L. F. Trebert, of the former concern, sold his interest in that company, and it is claimed, made an oral agreement not to build gas engines in Monroe county, and to give to the Trebert Gas Engine Co. the exclusive right to use the name Trebert in its corporate title. This concern now claims that he violated the agreement by incorporating the Trebert Auto and Marine Motor Co., and demands that the latter concern be enjoined from doing business in the state of New York under that name, and from using the name in connection with the motor business or any name or title



CHIEF WILLS OF FRISCO FIRE DEPARTMENT

similar to that of the plaintiff. Damages to the extent of \$1,000 are also claimed.

Big Capital Jump—The capital of the Detroit Automobile Mfg. Co., of Detroit, Mich., has been increased from \$2,000 to \$25,000.

Opened New Branches—The G & J Tire Co., of Indianapolis, Ind., has opened branches at 43 Columbus avenue, Boston, and at 337 Huron street, Cleveland.

Corbin Staff—The following officers were elected at the annual meeting of the Corbin Motor Vehicle Corporation of New Britain, Conn.: Philip Cortin, president; M. S. Hart, vice-president and treasurer; Paul P. Wilcox, secretary and assistant treasurer. The board of directors is formed by the officers and Charles Glover, Jacob S. Bretz, Andrew J. Sloper and Robert C. Mitchell.

Henley with Reliance—Augustus B. Henley, who was for many years with the Pope Mfg. Co. and its successor, the American Bicycle Co., later represented the business interests in America of A. Clement, the French builder, and who for the past few years has been the senior salesman of the Electric Vehicle Co.'s staff, has recently resigned to become sales manager of the Reliance Motor Car Co., of Detroit. Mr. Henley has entered upon his new duties and is remaining in the

east closing important territory assignments. He will take in the Boston show and will then go to Detroit.

Fifteen-Ninety-one Shy—Charles H. Morrison, of Watertown, N. Y., a manufacturer of gasoline engines, has filed a petition in bankruptcy with liabilities of \$984.09.

Italian Makers Organize—The manufacturers of automobiles, motor cycles, parts and accessories of Italy have recently organized the Board of Trade of Italian Manufacturers.

Moves to Country—H. B. Harrington & Co., of Buffalo, makers of gasoline motors and special machinery, will move their plant to Batavia, N. Y., and will incorporate with a capital stock of \$25,000.

Air-cooled Prosperity—The H. H. Franklin Mfg. Co., of Syracuse, is now employing between 1,200 and 1,400 men. The force will be increased as fast as the necessary number of men can be secured. The night force numbers 100 men and the company is obliged to have considerable of its work done in outside shops and factories. The erection of another building this year is being considered, but it may be possible to rent a building and thus defer building until another year.

Tucker in New Role—C. H. Tucker, who for several years has managed the Chicago branch of the Winton Motor Carriage Co., has taken the managership of the Tincher Motor Car Co., of Chicago. It is expected that new capital will be secured and the Tincher Company placed upon a much better footing. As distributor of Winton cars over a large area Mr. Tucker displayed a combination of tact and business which should infuse new vigor into the Tincher Company. Arthur Shanks, who has for several years been associated with the Chicago branch of the Winton Company, and who is brother of the well known Charley Shanks, sales manager of the Winton Company, has been made manager to succeed Mr. Tucker.



GOSSIP OF THE GARAGES

Livery in Montana—J. Southwick, of Great Falls, Mont., has arranged to establish an automobile livery in that city.

Maxwell in Detroit—The Eldridge-Dinfelder Motor Co., which was recently organized in Detroit, will handle the Maxwell car.

Sold a Fifth—At the auction sale held recently by the R. M. Cornwell Co., of Syracuse, N. Y., one dozen of the sixty machines offered for sale was sold.

Change of Owners—E. E. Denniston has succeeded to the ownership of the Alexander Weller Co.'s business in Buffalo, and is making a specialty of tops for automobiles and of refinishing cars.

Pittsburg Increase—The Liberty Automobile Co., a new Pittsburg concern, has located in its new building on Beatty street, east end, adjoining the quarters of the Hilland Automobile Co., and is building a large addition.

Acme in Philadelphia—The Acme Motor Car Co., of Reading, Pa., opened Philadelphia headquarters on Arch street below Broad last week. The company's complete line is on exhibition, and announcement is made that immediate deliveries can be made.

Winton Improvements—The Winton garage, on North Broad street, Philadelphia, has been completely refitted and renovated, the improvements including new asphalt flooring, new tools in the repair shop, new electric light plant and compressed air tanks for inflating tires.

Compound and Cameron—Albert E. Lazaro, an old hotel man, is the newest comer to the selling field in Hartford, Conn. Mr. Lazaro has taken the agency for the Eisenhuth Compound and the Cameron cars, for both of which he has the state territory. He will continue, as last season, to handle second-hand cars, in which field he has done a successful brokerage business.

Boston Agencies—F. D. Amsden, of Boston, has opened a garage at 188 Columbus avenue, and will handle the Cameron. The Linscott Motor Co. has secured the agency for the Reo and National cars for eastern Massachusetts, Maine, Vermont and New Hampshire. The Reliance and Phelps cars are now handled in Boston by the Boston Automobile Exchange, which is located at 173 Berkeley street.

Sixteen Varieties—T. C. Whitcomb, of Cleveland, has decided to open a branch garage and supply house at Toledo. He has taken a lease on quarters at 811 Jefferson avenue, in the Ashley block, and is already getting in stock. He will handle at the Toledo branch the Ford, Rambler, Premier and Maxwell, carrying in stock sixteen different styles and grades of cars. M. J. Roseboro will have charge of the branch.

Show of Its Own—During three days beginning March 29 an automobile "show," or, more properly, an opening, will be held in the salesrooms of the E. H. Towle Co., of Waterbury, Conn. The products of the following concerns will be displayed: Pope Mfg. Co., H. H. Franklin Mfg. Co., Packard Motor Car Co., Locomobile Co. of America, Winton Motor Carriage Co., Electric Vehicle Co., Hendee Mfg. Co., Fisk Rubber Co., Hartford Rubber Works, Noera Mfg. Co., Webb Co.

Dayton Busy—Activity marks the garages in Dayton, O., and everything seems to indicate that there will be many automobiles sold just as soon as the cold weather migrates. This does not mean that during the winter business has been dull, for many sales have already been made. Many new cars are added to the list of those which have been handled in this city. Kiser & Co. have the Winton, Olds, Yale and Franklin; the Peckham Carriage Co. has the Autocar, White, Packard, Northern, Pope-Toledo and Cadillac; the Central Automobile Co. has the Haynes-Apperson, Elmore and the Rainer electric trucks; N. Dubell has the Ford, Frayer-Miller, Wayne, Mitchell and Premier; Stark & Weeckesser are agents for the Pope-Tribune and Pope-Hartford; Borderwisch & Glancy have the Moline and Queen, while the

Dayton Auto Rubber Co. handles the Imperial. It is likely that within a few weeks several new agents will be added to the list.

Utica Addition—Charles H. Childs & Co., of Utica, N. Y., have opened a garage at 126 Lafayette street. The principal line to be handled is the Franklin.

Big One in Rochester—M. F. Meisch, of Rochester, N. Y., is having a garage built on State street. It will be a one-story structure, 42 by 102 feet, and will cost \$20,000.

Rent Wintons—A livery has been started in Minneapolis, Minn., by H. C. Goosman and B. W. Baker. It is located on Grant street. Eight Winton cars were purchased for the service.

New Iowa Concern—The Auto Supply Co. was recently formed in Independence, Ia. H. T. Lynch is president; J. C. Heald, vice-president; Emery Leach, secretary and treasurer. The new concern will sell and rent automobiles and handle accessories and parts.

Into Larger Quarters—The La Roche Automobile Co., of Philadelphia and Collingdale, Pa., has been considering the advisability of securing the Banker garage for its Quaker City quarters. The place is somewhat too large for the purposes of the La Roche concern, but its location is ideal, and a deal may be shortly closed between the interested parties.

Selden Patent Party Wall—The building at 109 Market street, Harrisburg, Pa., has been leased to the Central Pennsylvania Automobile Co. and to the Harrisburg Automobile Co. The former company will handle licensed cars, while only unlicensed machines will be handled by the latter concern. I. W. Dill is general manager of the Central and George G. MacFarland of the Harrisburg company.

Among Heavy Swells—L. L. Blood, of Toledo, has opened a garage in the old street car barns at the corner of Ashland avenue and Bancroft street, occupying a room 75 feet in length and 30 feet wide. The garage is in the swellest part of the city, so while Mr. Blood will make a specialty of repair work, his place will afford a barn for the cars of the aristocrats. He has also taken the agency for the Logan.

Sleighs and Motor Cars—"Bailey-the-sleighman" was a visitor in Hartford, Conn., last week. Mr. Bailey, whose sleighs and whalebone wagons have made his name famous in the horse-drawn trade, is alive to the motor age, despite the fact that he is close to the chloroform age limit, and even though he has just enjoyed the best sleigh selling season in his long experience in this line. Mr. Bailey has contracted for fifty Rambler cars to be sold from his repository in Portland, Me.

Plan Mammoth Garage—That Hartford, Conn., is to have a new and mammoth automobile station is told from the real estate transfers of the week. Tenants in the buildings on Mulberry and Gold streets have been notified to vacate, and many of them have secured new locations. This means the erection of a station larger than any other in town. It will run through to both streets, be two stories in height and will have immediate access to the Hotel Heublein, which faces on the same streets. The new station is located in the heart of the city. Who is behind the scheme is not known at this time, but it is believed that W. W. Walker, the syndicate grocer, is the financial end of the undertaking. Mr. Walker is a prominent Connecticut motorist.

New Buffalo Agencies—Walter Hayes has taken the Buffalo agency for the White steamer, and, for a time at least, will occupy a store in the new Rich building, Main and Tupper streets. John J. Gibson, proprietor of the Buffalo Automobile Station Co., has taken the Buffalo agency for the Northern. He has also the Haynes-Apperson. After both the Poppenberg Automobile Co. and J. A. Cramer had announced the taking of the Buffalo agency for Marion cars, the Poppenbergs seem to have definitely secured the agency. D. T. Keenan, formerly manager of the Buffalo branch of the Fisk Rubber Co., has assumed his duties as manager for the Poppenberg company. The Poppenberg company has also taken the Buffalo agency for Goodyear tires. Buffalo now has

branches of the Diamond, Hartford, Fisk and Goodrich tire companies and an agency for the Continental tires.

Score for London—The London agent of the Thomas flyer is said to have placed an order for twenty 1905 cars.

Hoosier Development—The Fisher Automobile Co., of Indianapolis, Ind., intends to open a branch in Logansport, Ind., provided a suitable building can be found.

Reo with Deyo—R. H. Deyo & Co., of Birmingham, have erected an addition to their gasoline factory, and will conduct a garage. They have secured the agency for the Reo in several counties in the southern part of the state.

Thousand Dollar Cars—"I look for about as much trade from the country towns as from the city," said Manager Kirk, of the Kirk-Hall Co., of Toledo, recently. "The most popular-priced road car to be sold among the country folk during the season will be that retailing at \$1,000. Prospects for big trade are of the brightest."

New Jackson Agents—The Jackson Automobile Co., of Jackson, Mich., has established the following new agencies: Ormond Automobile Co., Brooklyn; Greater Pittsburg Automobile Co., McKee's Rock, Pa.; Pioneer Automobile Co., Oakland, Cal.; Cleaver & Lapier, Huron, S. D.; Sioux Falls Auto & Supply Co., Sioux Falls, S. D.; C. W. Oathout, Newark, N. J.

Iowa Trade Good—The Riddell Automobile Co., of Des Moines, which has been incorporated for \$25,000, is one of the largest automobile and supply concerns in Iowa. In speaking of the prospects this year W. J. Riddell, president of the company, said he thought he would be able to sell 150 cars, judging from the amount of business already done and the interest shown by the people of the state.

Elaborate Pierce Garage—Just in time for the reception of the crowds whose interest in automobiles will be quickened during show week, the George N. Pierce Co., of Buffalo, has finished work on its new salesroom and garage on Main street. The main salesroom, 80 by 120 feet, is decorated in a most attractive way with paneled wainscoting of dark wood and green. Large pillars of dark wood support the ceiling, while the walls and ceiling are finished in yellow. The show windows cover the entire front of the store and extend back 30 feet on each side. At the rear of the store are the offices which soon will be occupied by the officers of the Pierce company and by Sales Manager E. C. Bull. Behind the store in a separate building, 80 by 120 feet and of fire-proof construction, is the garage. The repair department is fitted with approved machinery, which is operated by Niagara Falls electric power.

Metropolitan Monster—By far the largest and most pretentious metropolitan garage yet projected is that announced to be begun at once by the Standard Automobile Co., of New York, as the future home of Decauville cars. Its location will be in the rapidly developing Upper Broadway motor car district, but a block away from the site of the new club house of the Automobile Club of America. The main building, which will be devoted chiefly to sales, reception and locker rooms, and executive offices, will be of 4 stories and have a frontage of 56 feet on the northwest corner of Broadway and Fifty-sixth street, and 130 feet on the latter. In the rear, running from Fifty-fifth to Fifty-sixth streets, with a frontage of 75 feet on each street, will be a building devoted mainly to storage. Vice-President Partridge estimates that the total floorage will be 85,000 square feet and that storage for between 300 and 400 cars will be available. Work will be rushed. Occupancy of the garage is expected to be had by May 15, and of the office building by June 1. The architecture of the building will be French Renaissance. The fittings and appointments will be up to date and luxurious. Altogether the latest move of the Standard Automobile Co. is one of the most ambitious in metropolitan trade history.



AMERICAN MOTOR LEAGUE

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OFFICIAL BULLETIN

THIS LEAGUE

Is Now Collecting Route Information

covering all automobile routes in the important states and will publish road books for motor car users as fast as complete information is received. The A. M. L. is the only organization engaged in this work, and it invites the co-operation of all persons interested. For full information and membership blanks address American Motor League, Vanderbilt Building, New York City.

ROUTES RECEIVED

The secretary acknowledges receipt of memoranda describing the following routes for the Massachusetts road book:

From Boston to Nashua, N. H., via Medford, Symmes' Corners, Winchester, Woburn, Burlington, Billerica, Lowell, Middlesex Village, Tyngsboro, Littleton and Nashua; total distance, 40½ miles; surface fairly good; level, rolling and hilly.

Lynn to Fitchburg, via Medford, Arlington, Lexington, Concord, Maynard, Bolton, West Lancaster and Fitchburg; total distance, 54.4 miles; rolling and hilly; good to fine all the way.

Boston to Fitchburg, via Cambridge, Arlington, Lexington, Concord, Concord Junction, Maynard, Stow, Bolton, North Lancaster, Leominster and Fitchburg; total distance, 50.2 miles; level, rolling and hilly; road excellent.

Boston to Albany, via Fitchburg, Gardner, Greenfield, North Adams and Albany; total distance, 185.1 miles.

Boston to Laconia, N. H., via Nashua, Merrimack, Manchester, Suncook, Pembroke, Concord, West Concord, Penacook, Boscawen, Franklin, Tilton, East Tilton, Laconia; total distance, 110.5 miles.

Worcester to Springfield, via Webster Square, Valley Falls, Cherry Valley, Leicester, Spencer, East Brookfield, Brookfield, West Brookfield, Warren, West Warren, West Brimfield, Palmer and Springfield; total distance, 99 miles; varying grades; surface generally good; detailed description will be included when the road book goes to press.

ROUTES IN MARYLAND

The league is indebted to Judge Conway W. Sams, of Baltimore, for a satisfactory road map of Baltimore and vicinity. The routes shown on this map include the Philadelphia turnpike, the Bel-air turnpike, the Hartford turnpike, the York turnpike, the Falls turnpike, the Resistertown turnpike, the Liberty turnpike, the Windsor road, Frederick road, Washington turnpike, old Annapolis road, and new Annapolis road. Various branches connecting these trunk routes are also shown. The league is also indebted to Judge Sams for a clear outline map showing good roads radiating from the city of Washington and for descriptions of the following routes: Baltimore to Gettysburg, via Westminster, Fountain Valley, Frizzellburg, Tyrone, Taneytown, Bridgeport, Emmittsburg and Gettysburg, a total of 73 miles: road is mostly hilly, but the surface generally in fair condition. Baltimore to Hagerstown, via Canonsville, Ellicott City, Pine

Orchard P. O., St. Charles College, Mayfield, Clarkson, Cooksville, Lisbon, Poplar Springs, Funkstown, Hagerstown, total distance about 75 miles; variable grades; excellent road.

The league is also compiling a route through the Allegheny mountains from Baltimore to Oakland, a distance of about 201 miles. This route is one of the grandest mountain routes to be found in this country and includes a run of 30 odd miles through the wilderness of Garrett county, Md.

NEW YORK ROAD BOOK

The league is indebted to R. W. Whipple, of Binghamton, N. Y., for several very reliable route descriptions. Mr. Whipple's experience and ability have combined to produce some of the most satisfactory information that the league has thus far obtained, and several of the routes in central, southern and southeastern New York will be copied wholly from Mr. Whipple's notes contributed for that purpose.

From Chester M. Kent, of New York, the league has received satisfactory memoranda covering in detail routes from New York city northward and eastward through Bronx Borough; thence through New Rochelle, Mamaroneck and northward to Katonah. The same notes describe routes eastward from Mamaroneck, through Portchester, Stamford, Norwalk, Southport, Bridgeport and other towns to the eastward. From Stratford a route is given running northward through the Connecticut towns of Huntington, Derby, Ansonia, Seymour, Beacon Falls, Naugatuck, Waterbury, Thomaston, Torrington, Winsted and towns farther north. Again from Norwalk a route is described running northward through Danbury and thence on to New Milford. In this connection it is proper to announce that the league is anxious to receive further information covering routes in eastern New York and in Connecticut. Some of the printed routes covering these sections are quite unreliable.

NEW JERSEY ROAD BOOK

Acknowledgment is due to Hervey Kuhl, of Flemington, N. J., for an excellent map of New Jersey, showing the completed macadam roads extending through the several counties of that state. This map, with the detailed maps obtained from other sources, and notably from the government geological survey, will aid the league greatly in getting out a first-class road book for New Jersey. The great need is a little more energy and interest on the part of automobilists in that and other states.

PENNSYLVANIA ROAD BOOK

Sketch maps and route information have been received, covering the following localities:

From Mercer county comes a local map showing routes from Mercer to Jamestown, Sheakleyville and New Lebanon to the northward, and also separate routes to North Liberty, New Castle, Pulaski, Youngstown, Ohio, Sharon, Centertown and Jackson Centre; also a local map of Lawrence county, showing eleven routes radiating from New Castle to important towns in different directions.

From Butler county the league has received descriptive notes describing route from Butler to Emlington, Harrisville, Mercer, Centerville, Portersville, Harmony, Monroe and Pittsburg.

More information is needed from Pennsylvania. The league has added about 3,000 names to its list of Pennsylvania automobilists during the last fortnight, and a vigorous effort will be made to encourage their co-operation in putting together a first-class road book.

OHIO ROAD BOOK

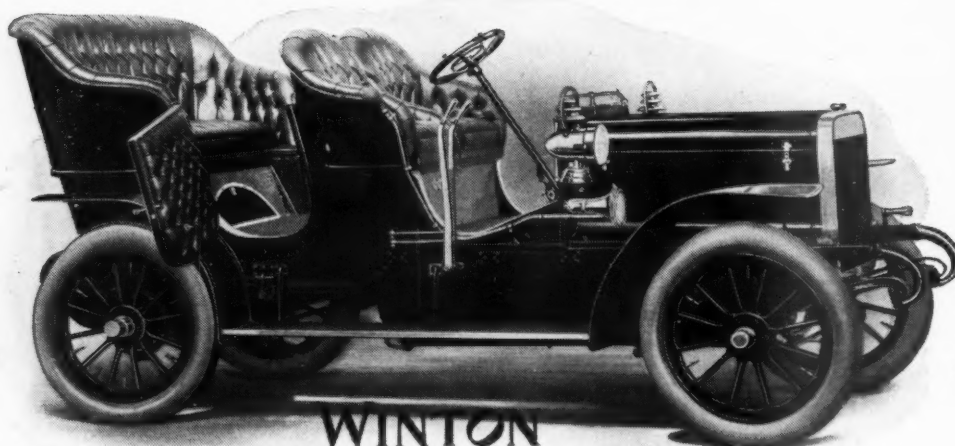
Route descriptions have been received as follows: Lima to Ottawa; Lima to Findlay; Fremont to Findlay; Norwalk to Akron; Cleveland to Youngstown; Cleveland to Akron, Massillon, New Philadelphia and Coshocton; Cincinnati to Dayton, Springfield, Marysville and Delaware; Columbus to Washington C. H., Xenia, Dayton, Hamilton and Cincinnati; Cleveland to Elyria, Norwalk, Tiffin, Findlay and Ottawa; Zanesville to Newark, Columbus and Springfield; Columbus to Athens and Parkersburg; Chillicothe to Washington C. H., Springfield, Sidney and Wapakoneta; Cleveland to Medina, Ashland, Mansfield, Gallion, Marion and Kenton.

TO ALL MEMBERS

The league has undertaken a great work. It must have the help of its members—help to enlarge its membership and to make these new road books what they should be, a credit to you and to the organization. The secretary will gladly send you a few membership blanks if you will invite your automobiling friends to come into the fold. He will gladly send you one or more route slips if you will volunteer to send in a description of one or more good routes in your state.

Every clear headed, clean cut, self-respecting, sober automobilist is welcomed as a member of this league. There is no initiation fee. The fee for annual dues is \$2. Old members and new members pay the same. A postal card request sent to American Motor League, Vanderbilt building, New York, will bring further information if desired.

WINTON



WINTON

OBSERVE THE DETAILS

Details Show the Character of a Motor Car

A car is never better than its poorest part.

If details are nicely worked out, if there is honesty, accuracy, precision in the small things, the car as a whole is not likely to disappoint.

Because, when a maker tries to cheat the buyer, he saves on the little things, details that he can hide—at least, for the time being—and glosses the whole over with a fine deceitful finish.

In buying a car, scrutinize the little things.

For instance, find out if the Crank Shaft, Pistons, Wrist Pins, Transmission Shafts and Axles are merely MACHINED, or whether they are also GROUND.

That may seem to be of little importance, BUT—it marks the difference between a bad car and a good one.

Costs money and takes time to GRIND these parts. If the maker shirks that work, he saves—at your expense.

When these parts are GROUND, the result is smooth bearing surfaces, a nicely running Car, and MONEY SAVED FOR YOU.

On the WINTON all these parts are GROUND to MICROMETER GAUGE.

And that same exacting carefulness marks WINTON manufacture from the ground up. BUY A WINTON.

All features fully described in Catalog No. 2.

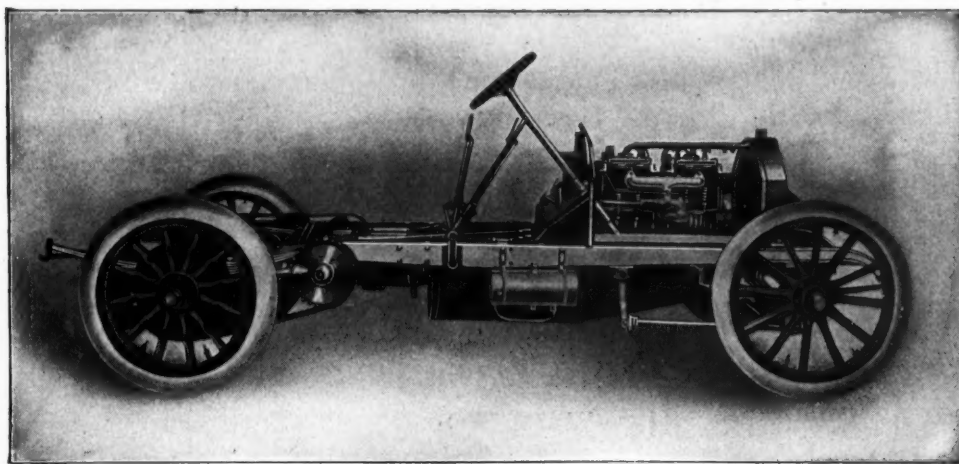
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The House of Michelin was established in 1832 at Clermont-Ferrand, France. They make all kinds of Rubber Goods and their productions are famous throughout the world.

When the first Pneumatic Tire was demanded Michelin made it and applied it to the first automobile.

A series of successes followed their pneumatic tire and tube productions. Now they are the conceded leaders in this line in the world.

In 1904 the quality of these goods gained the distinction of winning every important race in every country. This year the great Italian road race for Maharajah cup and the greatest of World's Records at Florida—1 mile in 32 $\frac{4}{5}$ seconds and 1 kilometer in 20 $\frac{2}{5}$ seconds, were won on Michelin Tires. These demonstrations are noteworthy.

To use a Michelin Tire is a pleasure, besides cutting your tire expenses in half.

Insist on having Michelin Tires on your car.

Immediate deliveries, all sizes.

Write for instruction book telling why these tires and tubes are superior to all others.

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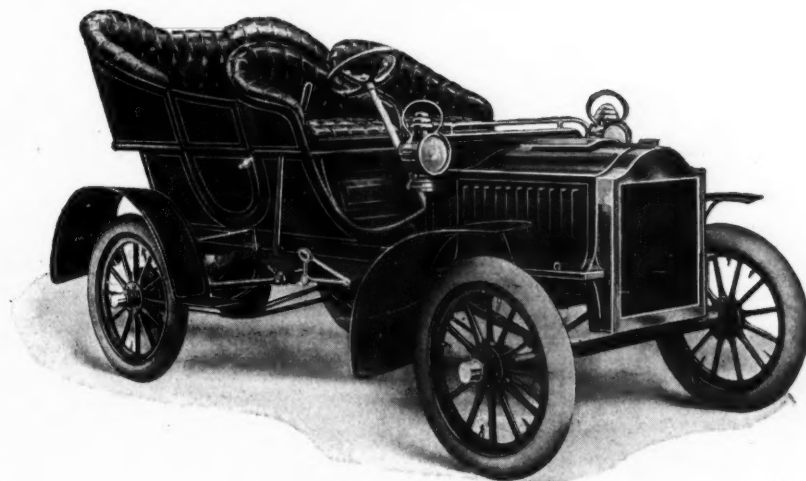
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When you have made a careful comparison of this car with other cars, you will understand why the Oldsmobile is the greatest selling proposition on the market today—why it was the only light car to be awarded a Gold Medal at the St. Louis Exposition.

If you are interested in further details we will be pleased to send them. Address

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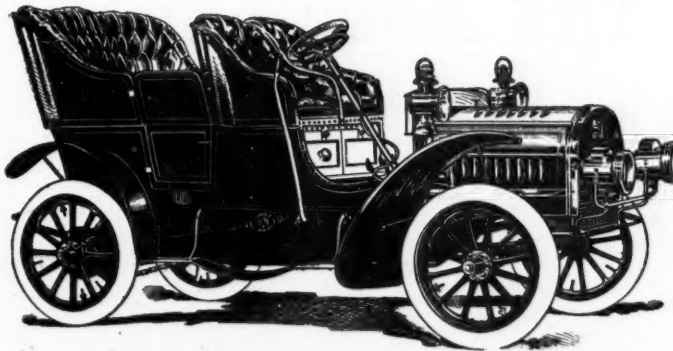
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SURREY, TYPE ONE

18 H. P.

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Other Models \$750, \$850, \$2000 and \$3000

THERE is no pleasure in traveling over country roads faster than this vehicle can carry you. Besides all needed power, it has exceptional road clearance and other provision for comfort, reliability and ease of control.

The working parts are readily accessible, and so simple that adjustments can be made without the help of a mechanic and without crawling under the machine.

To beauty, reliability, and ease of operation is added the comfort made possible by big luxuriously upholstered seats and the almost complete elimination of vibration by the long wheel base, full elliptic springs, large tires, rigid bracing of the engine and the balancing of all reciprocating parts.

Every part except the body, tires and induction coils is made in our own factory. The savings thus effected explain the low price.

When delivered the machine is equipped with brass side, tail and two gas headlights with separate generator, brass horn, drop forged wrenches, oilers, pump and repair kit.

Other Models \$750, \$850, \$2000 and \$3000.

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We pronounce it "DUKANE"
Please yourself, though.

A Lady's Watch, if geared in proper ratio to the rear axle, would pull any automobile up any hill—in time! Eternity might better express it! Sounds idiotic, but—think it over. Given the actual horse-power, the actual weight of the car and the actual grade, it is a simple problem in mechanical mathematics to prove how long it will take a car to climb a given hill.

Economical transmission of the power, perfection in design and construction are the only factors that give one car advantage over another. Otherwise, "hill climbing ability," about which some agents prate so (un)knowingly, is simply a question of gear ratios.

We Duquesne Folks don't make fool assertions or fool claims, but we do claim that

The Duquesne Car (16-21 H.P. 4-cylinder air-cooled) will climb steeper hills faster than most \$3,500 cars—the DUQUESNE price is "HALF OF THIRTY-FIVE" you know.

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GUARANTEED

2650 LBS.

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Direct Flexible Shaft Drive—Free Driving Axle—Perfect Throttle Control
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NO LUGS REQUIRED WITH G & J THREAD FABRIC TIRES

Our special clincher construction, giving uniform leverage at all points, holds the clincher securely in place.

The flap provides a smooth seating for the inner tube, and removes the possibility of pinched tubes.

The thread fabric construction prevents the heating of the tires in action, hence they are not self-destructing. It also makes the tire so pliable that anyone can easily place it on and remove it from the rim.

ISN'T THIS THE TIRE YOU WANT?

MOST DURABLE
NO EDGE CUTTING
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EASIEST IN THE WORLD TO HANDLE

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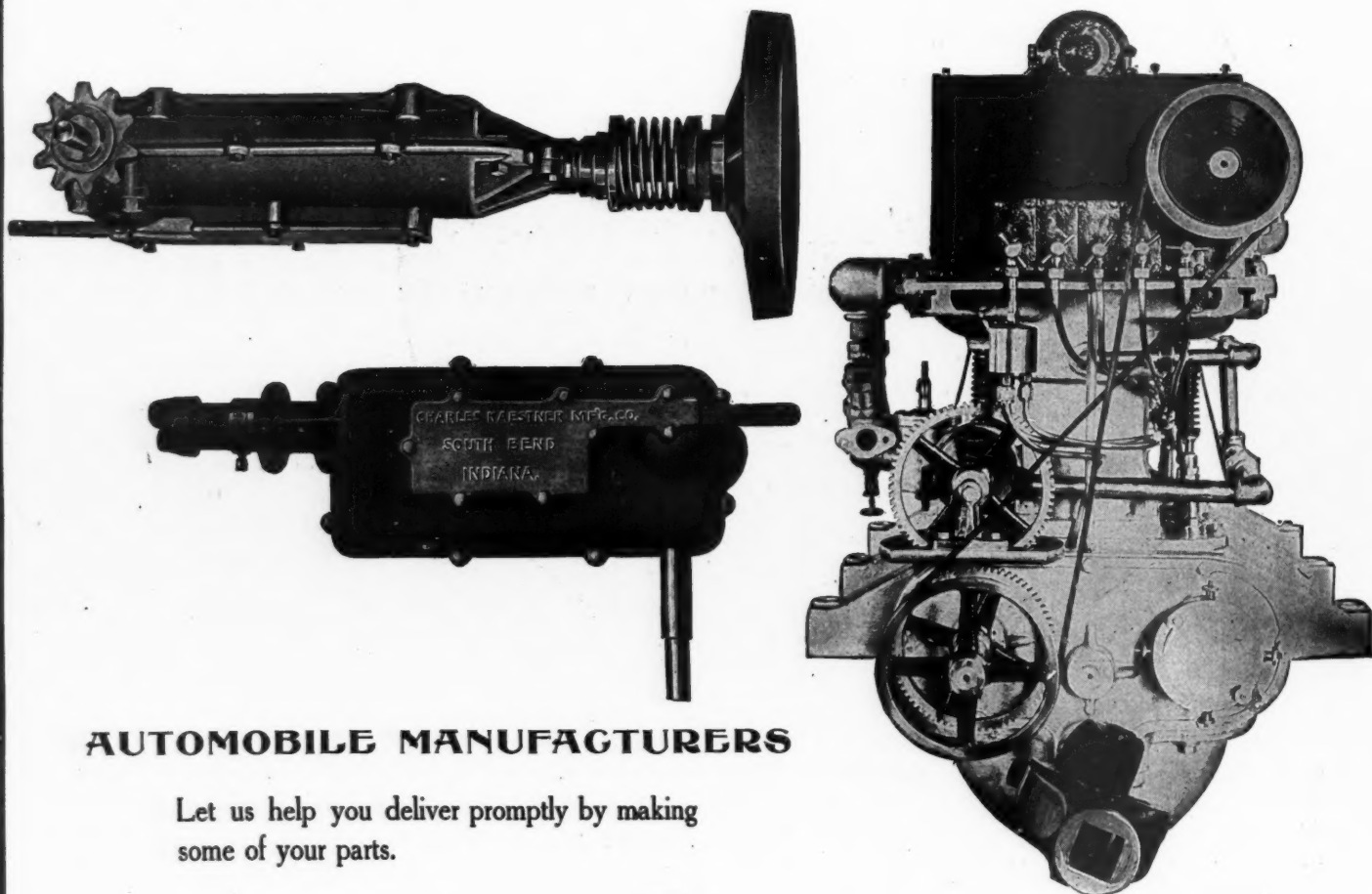
DETROIT
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Rims branded in the channel with these copyrighted marks have been inspected and pronounced perfect. We guarantee our tires on all rims so branded.

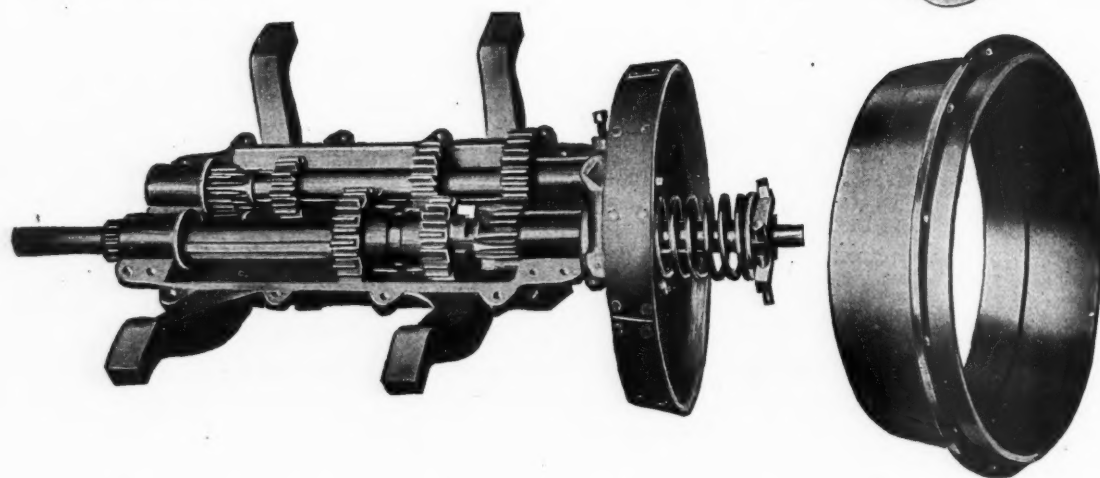


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Let us help you deliver promptly by making some of your parts.



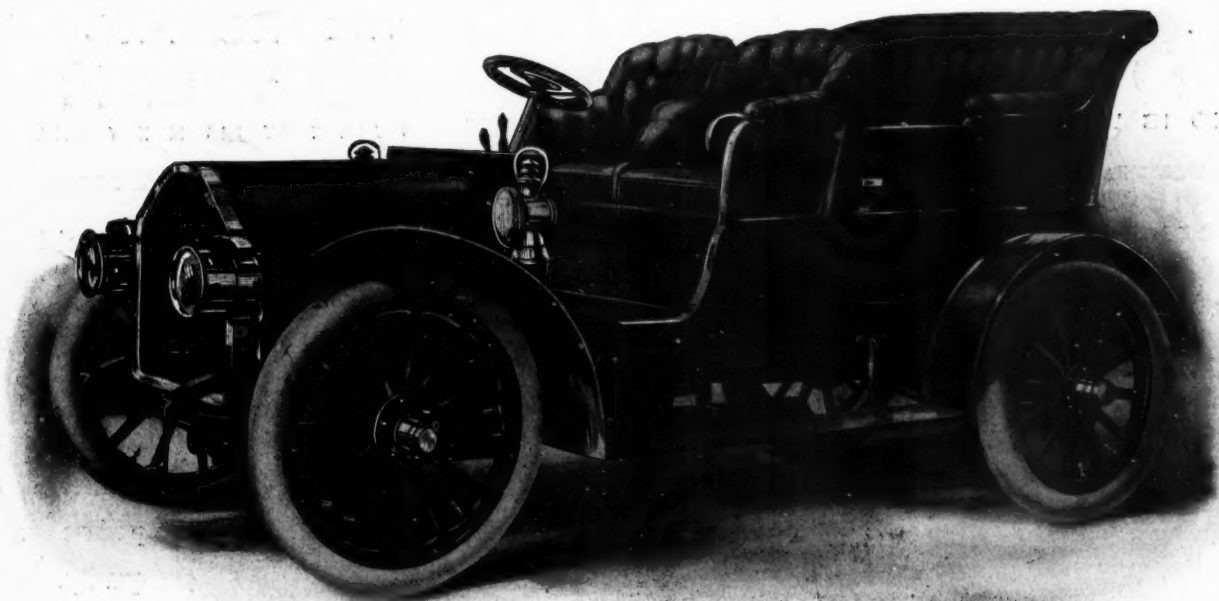
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WE NOW MAKE 18 different styles of Transmissions. Motors from 10 to 125 H. P. for Automobiles, Boats and Mining Machinery. Side Lever Controls, Wheel Steering Devices. Can deliver to specified contracts.

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Orient Efficiency

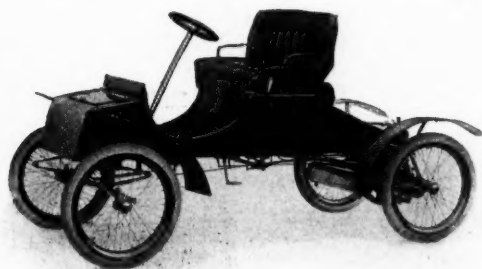
Mechanical efficiency is the average of performance. Orient efficiency is high because the average of performance of every part of an Orient Car is as nearly perfect as human skill, brains and experience can make it.



Orient Model de Luxe Touring Car, 20 H. P. Price, \$2250

First, there is the Orient Motor—a typical Waltham product—the result of seven years' practical experience in motor building. It is designed on lines of wonderful simplicity, yet remarkable efficiency—tested crucially and thoroughly proven by days and weeks and months of work last summer and fall.

Then there is the Orient Transmission—the simplest, strongest, 3 speed-and-reverse



Orient Runabout, 4 H. P. Price, \$475

gear in America—none more efficient. And the lubricating system—one stroke of the pump oils the cylinders for twenty-five miles. And the construction—reliable as steel beams; a minimum of weight—and a



Orient Tonneau, 4 H. P. Price, \$525

maximum of efficiency. Inside facts about 1905 Orients, and details of our great Dealers' Selling Plan—with a catalogue—if you say so.

ORIENT TOURING CARS

Model E, Touring Runabout, with semi-racing body,	16-H. P., \$1500
Model E, With Detachable Tonneau,	- 16-H. P., 1650
Model F, Light Touring Car with Tonneau,	16-H. P., 1650
Model G, Touring Car,	- 20-H. P., 2000
Model de Luxe, Touring Car,	- 20-H. P., 2250

ORIENT BUCKBOARD LINE

Buckboard, Model A,	- 4-H. P., \$375
Surrey, Model B,	- 4-H. P., 450
Runabout, Model C,	- 4-H. P., 475
Tonneau, Model D,	- 4-H. P., 525

Waltham Manufacturing Company

Members of the Association of Licensed Automobile Manufacturers.

FACTORY, WALTHAM, Mass: GENERAL SALES OFFICES: 44 BROAD STREET, NEW YORK

A HEART TO HEART TALK

WITH THE LIVE DEALER

WHO IS WILLING TO BE CONVINCED

Reasons why you should secure the Queen agency:

1st. Because we have the most complete line of cars ever offered by any manufacturer—seven (7) different models.

2d. Excellent workmanship throughout, high finish, swell upholstery, powerful motor and popular price

makes them natural sellers.

3d. A well pleased customer this year means increased sales in the future; live agents appreciate these facts and are securing territory.

WITH THE PROSPECTIVE BUYER

WHO WANTS ALL THAT HIS MONEY WILL BUY

A few reasons why you should buy a Queen:

1st. Because they have no equal on the market for the price and quality.

2d. They are finely finished throughout, built of the best material, ensuring long life and easy running, simple in construction with ample power for all conditions.

3d. All parts interchangeable insuring you against vexatious delays.

4th. We are granting agencies only to thoroughly responsible parties who will be courteous and attentive to customers.

MODEL "E"

Price \$1,000



QUEEN

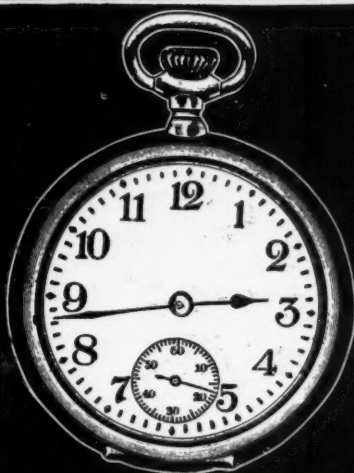
C. H. BLOMSTROM MOTOR COMPANY

Chicago Agent: HENRY BRANSTETTER
1466 Michigan Ave.

DETROIT, MICHIGAN

New York Agent: C. A. DUERR & CO., Inc.
Broadway and 58th St., N. Y.

**EVERY
TICK
OF THE WATCH**



**\$\$
MEANS MONEY**

TO THE MANUFACTURER



**OUR
LINE**

Steering Wheels and Tilting Columns, Circulating Pumps, Commutators and Carbureters, Bushings either bronze or babbitt lined, Aluminum Gear and Crank Cases, Lamp Brackets.

Tonneau Door Handles and Hinges, Brass and Aluminum Castings of All Kinds

LISTEN!

We make a real feature of pattern making from blue prints of special parts.

Automobile manufacturers are thus saved much time and expense.

We make the pattern and from it turn out the article wanted.

The sample is rushed through to the manufacturer and, if O. K., a telegraphic say-so presses the button at our end of the line, thus starting at top speed the work of quick production.

If a change in the sample is found necessary, another blue print, showing changes desired, is all that we need.

This may be sent by special delivery mail. That's pretty quick. Think of the time saved by our methods!

We realize the shortness of time in which automobile manufacturers have to make promised deliveries, and we are in a position to do all that human power can do to help save time.

When anything of an urgent nature arises, we work nights and Sundays, if need be, to get the work out quickly.

Every departmental head in our employ has made practically a life-study of automobile parts and construction.

Many of our men date back in experience over ten years, when the first automobile ever seen upon the public streets of Detroit was built by US.

All these points mean something.

And every automobile manufacturer who values time at this all-important stage, knows it.

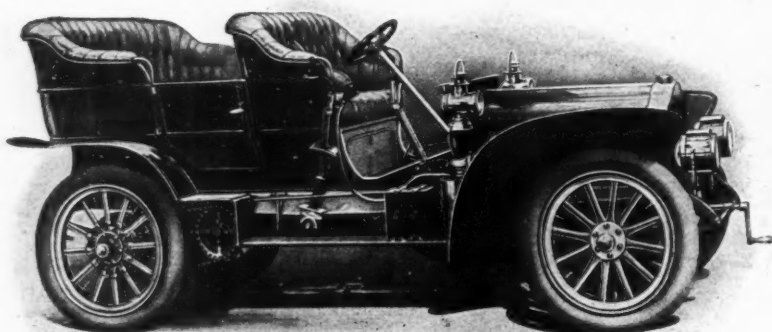
Write us for a practical demonstration of the dispatch with which we do everything from answering mail clear through to delivering completed orders.

And don't forget that the sooner you write, the more time you save in getting precisely what you want and as you want it, on time.

AUTO BRASS AND ALUMINUM CO.

THOS. D. BUICK, General Manager.

Kearsley and Mill Sts. . . . FLINT, MICH.



Columbia

35-40 Horsepower

Mark XLV Cars

In the development of COLUMBIA GASOLINE CARS improvement has been added to improvement, betterment to betterment, until in our 1905 models we have a uniformity of excellence covering motive power, control and body design, that can be found in no other American cars.

Columbia Electric Carriages have been the leaders through all changes of design and type since 1895 and our new models more than sustain the reputation of their predecessors.

Catalogue of Columbia 35-40 and 18 h. p. Gasoline Cars will be sent on request. Also, separate catalogues of Columbia Electric Carriages and Columbia Commercial Vehicles.

Standard Side Door Entrance . . .	\$4,000
Royal Victoria	5,000
Double Victoria	5,000
Landaulet	5,500
Limousine	5,500

18 Horsepower Light Touring Car	\$1,750
Electric Victoria Phaeton . . .	1,350
Light Electric Runabout . . .	900

ELECTRIC VEHICLE COMPANY, Hartford, Conn.

NEW YORK
134 West 39th Street

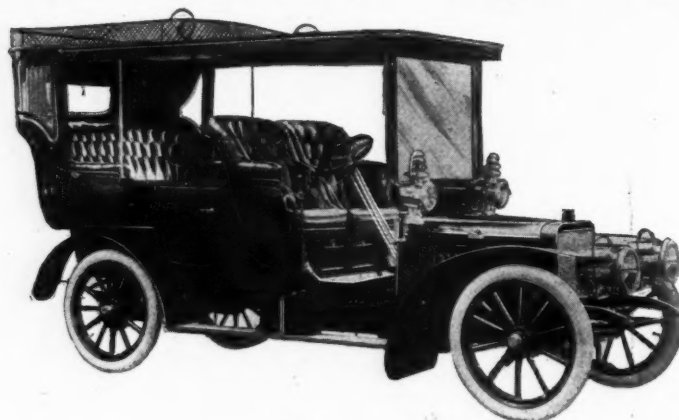
BOSTON
74 Stanhope Street

CHICAGO
1413 Michigan Avenue

Member Association Licensed Automobile Manufacturers

THE DARRACQ

Represents the Most Advanced
Features in Foreign Improvement



Equipped with the Latest Magneto and Jump Spark Ignition
Perfect Automatic Throttle Control
Positively Noiseless

LET US PROVE THIS TO YOU

PARTS FOR ACCIDENTS CARRIED IN STOCK
Up Town Store, 147 W. 38th St., NEW YORK

The F. A. LA ROCHE CO.
652 to 664 Hudson Street, NEW YORK

STANDARD PARTS FOR POWER TRUCKS AND WAGONS

The marked economy of power wagons for delivery, express and truck service, and their superior reliability when in reasonably intelligent hands, is so well established that those who are conversant with the facts cannot fail to see that power wagons are rapidly beginning to supersede horse service.

PARTS WE SUPPLY

STEERING GEAR, Complete	CHAINS	COUNTERSHAFT and REDUCTION GEARS
FRONT AXELS, Complete	SPROCKETS	COUNTERSHAFT BRAKES
HUB BRAKES	DISTANCE RODS	MOTOR HANGERS
ELECTRIC MOTORS	CONTROLLERS and Accompanying Details	

SEND FOR CATALOGS Nos. 2, 3 and 5.

TOURING CAR PARTS, CATALOGS Nos. 6, 7, 8 and 9

Federal Manufacturing Co., Elyria, Ohio

Selling Agent: HAYDEN EAMES, American Trust Bldg., Cleveland

Notice to the Trade.

We have entered suit against the United States agency of the Michelin Tire Co. for infringement of G & J Patents, and the trade is warned against the purchase of such tires.

The following manufacturers are licensed under G & J patents:

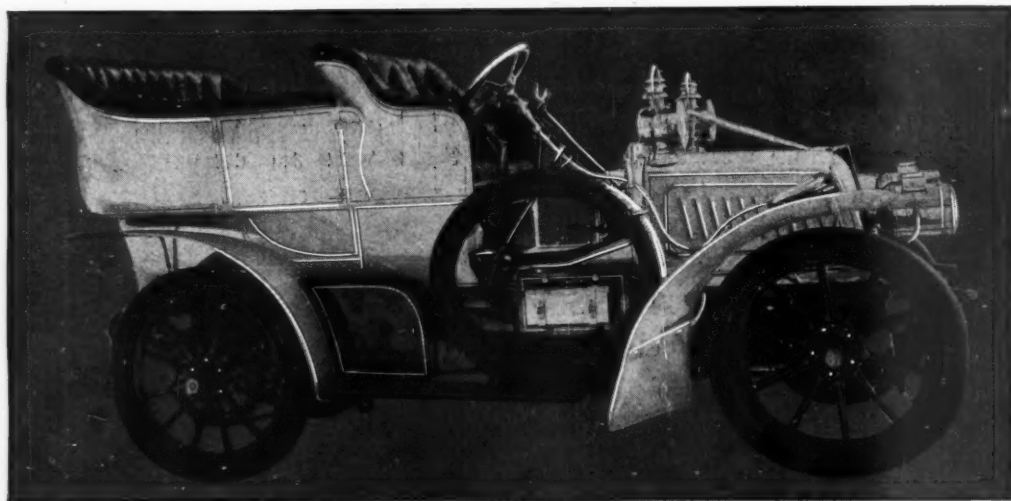
Hartford Rubber Works Co.
The B. F. Goodrich Co.
Diamond Rubber Co.
Morgan & Wright
Fisk Rubber Co.

Continental Caoutchouc Co.
Goodyear Tire & Rubber Co.
International Auto & Vehicle
Tire Co.
India Rubber Co.

G & J TIRE CO., MAIN OFFICE AND FACTORY **Indianapolis, Indiana**

WORTHINGTON AUTOMOBILE COMPANY

547 Fifth Avenue New York City



24 h. p. Berg Touring Car

IMMEDIATE DELIVERY

MEMBERS A. L. A. M.

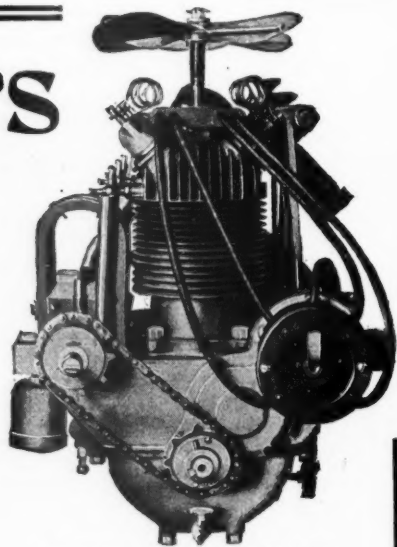
Merkel Auto Motors

**High Speed, Four-Cylinder Vertical
Air-Cooled Type**

Noiseless running. Piston rings and bearings ground to exact size. Connecting Rods drop forged. Heating surface minimized. Perfect ignition. No hammering of cam or valve lifters. No dry cells. Engine starts with one throw of the crank.

Only Successful Cold Weather Motor

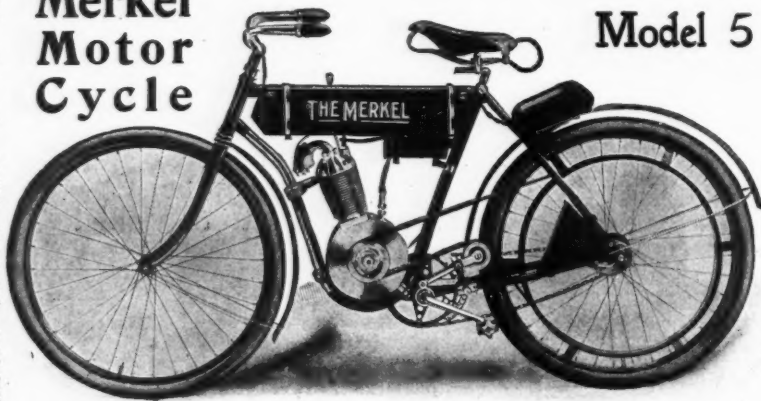
Carburettor compensating float feed type. Positive action splash system lubrication. Mechanically operated valves.



Form H—Air-cooled—12-14 H. P.
Compact, Efficient—Weight 220 lbs.
Speed variation 500 to 2500 R. P. M.

**Merkel
Motor
Cycle**

Model 5



Built for hard and lasting

Service. Spring frame. Easy to operate and comfortable to ride. Very speedy. Moderate cost. Write for prices and particulars.

Address Dept. G.

MERKEL MOTOR CO.

FACTORY:
LAYTON PARK

Milwaukee, Wis.

"STEVENS-DURYEA"

Touring Car...Model R

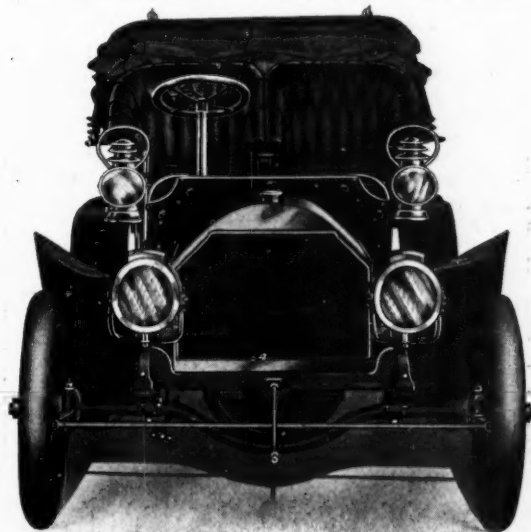
NEW 20 HORSE-POWER, 4 CYLINDER

Price \$2500

A CAREFUL study of the wants of the public has led us to produce this notable addition to our make.

Cost of maintenance of our latest Model R is reduced to the minimum figure.

**HIGH POWER
GREAT STRENGTH
LIGHT WEIGHT**
are the reasons for this desirable condition.



PROVE our claims by trying one of our reliable, efficient and durable carriages, and thus ascertain the secret for the invariable popularity of the

STEVENS-DURYEA

Write for name of nearest agency.

AGENTS! Get posted on our attractive automobile proposition.

LEADING FEATURES

Aluminum Body
Three Speeds and Reverse

Side Entrance Tonneau
Bevel Gear Drive

Pressed Steel Frame
Water Cooling

Capacity Five Persons

Three Brakes
Weight, 1,650 pounds

J. STEVENS ARMS & TOOL COMPANY

705 Main Street

CHICOPEE FALLS, MASSACHUSETTS

Member Association of Licensed Automobile Manufacturers.

OUR COMMERCIAL CAR



Model F--Cadillac

here illustrated is the most practical light car of its class. Five of these cars in constant use the past year at our factory have done the work of fifteen horses, and are still doing it. You can kill a horse but not a Cadillac. As a practical test of what one of these cars will stand, W. V. Snyder & Co., of Newark, N. J., put one of these vehicles in commission July 18; on Dec. 3 they had driven it 6,014 miles, at a total expense for gasoline and oil of only \$190.04. The saving over a horse-drawn vehicle those twenty weeks aggregated \$567.84, to say nothing of its value as an advertising medium. For light, rapid work, day in and day out, we know of no car at or near the same price that can compare with the Cadillac. **Price, \$950.**

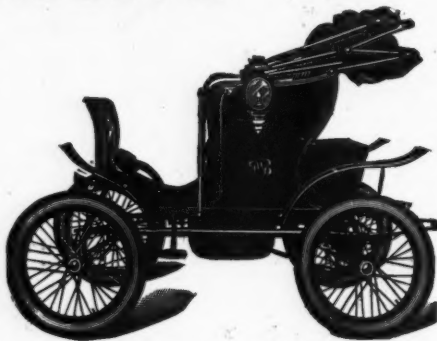
FULL DETAILS, CATALOG, ETC., SENT FREE ON REQUEST

Cadillac Automobile Company, Detroit, Mich.

Member of Association of Licensed Automobile Manufacturers

CLASSIFICATION ... WHY? DISTINCTIVE

THE LIGHTEST
THE STRONGEST
MOST DURABLE
MOST EFFICIENT
BEST FINISHED



ABSOLUTELY SAFE
PERFECTLY CLEAN
BEST TO RIDE
MOST ECONOMICAL
TO KEEP

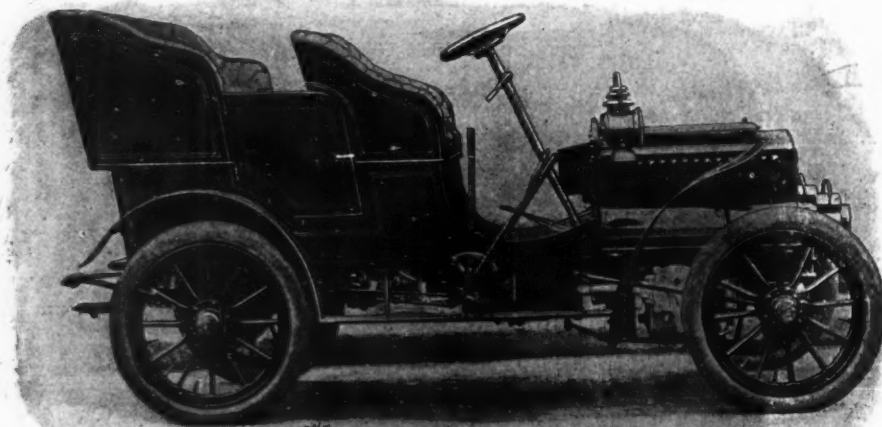
THE BAKER ELECTRIC

Attractive in Rich Finish and Design. ✱ Simply Manipulated. ✱ Always Satisfactory.
A Carriage Any Lady Can Drive.

SEND FOR OUR B K CATALOG.

THE BAKER MOTOR VEHICLE CO., Cleveland, Ohio

Chicago Agents: PARDEE-ULLMANN CO., 1400 Michigan Ave., Chicago.



Chainless Wolverine Model "D"

Agents Who Want

A Seller

A CAR THAT WILL "STAY SOLD"

With all the specifications of \$3,000 cars, with 20 H. P., sliding gear transmission, 3 speeds ahead, direct drive, two cylinder opposed, set

crosswise in front, and above all a car SIMPLE in construction and operation, should get a demonstration early in order to secure valuable territory. Best discount, and generous terms and contracts to agents. New Catalog.

PRICE, \$1,600

Reid Manufacturing Company

Dept. "D"

DETROIT, MICH.

"The Maxwell"

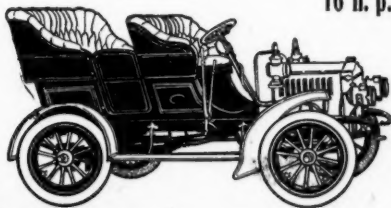
There is not one complicated detail throughout "Maxwell" construction. The number of parts has been cut down to a minimum, and each part has been treated as a special problem and carefully worked out to perfection. It is fundamentally a car easy to explain, easy to understand and easy to operate.

The owner of a "Maxwell" is absolutely sure of two things.

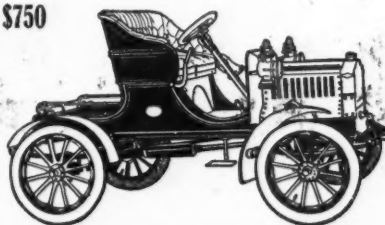
First, that no car in the market at any price is more reliable than his, and second, that he owns the one car before the public today in which, through its rare simplicity of construction, there is nothing to do but ride.

16 h. p. Touring Car, \$1400

8 h. p. Tourabout, \$750



The "Maxwell" cars have no pump (thermo-siphon). Their double opposed motor is in front under the hood and easily accessible in every part. They have Bevel Gear Drive. Metal Bodies. Transmission Case and Crank Shaft in Aluminum casting. "Perfectly simple and simply perfect."



Maxwell-Briscoe Motor Co.

TARRYTOWN, N. Y.

New York City Salesroom, 317-319 W. 59th St.



FIVE TON TRUCK.

Gasoline Freight Trucks and Observation Cars

ANY CAPACITY OR SPEED
WRITE FOR ESTIMATES

CONSTRUCTION Heavy and Substantial. Safety factor of Five. STEEL FRAME. Size of Platform to suit purchaser. Enclosed Cab. ENGINE, four cylinder, vertical, Improved Design.

SLIDING GEAR TRANSMISSION; Three speeds ahead (maximum 10 miles per hour) one reverse.

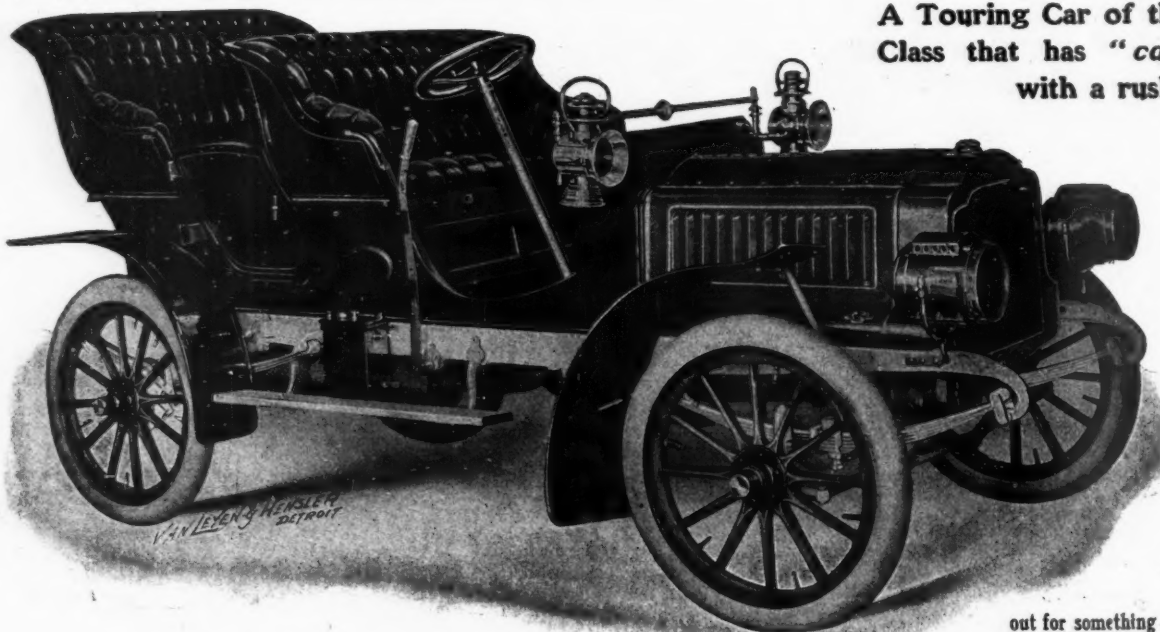
Now operating successfully under Commercial Conditions, demonstrating Economy and Reliability.

WHITING FOUNDRY EQUIPMENT CO.

GENERAL OFFICE AND WORKS: HARVEY, ILL. (CHICAGO SUBURB) U. S. A.
CHICAGO OFFICE: 1547 MARQUETTE BUILDING

THE HAMMER

24 H. P. 4 Cylinders
Price....\$2,500



A Touring Car of the Highest
Class that has "caught on"
with a rush.

Bear These Three
Facts in Mind

1ST—The Hammer Touring Car embodies more sterling mechanical improvements in its construction than any similar priced car in the world.

2ND—There's an Air-Cooled Hammer Runabout coming that will revolutionize the trade. Ready before April 1. Write for details.

3RD—Good live dealers who are always on the lookout for something unusually good will write QUICK for our proposition. It's interesting.

HAMMER MOTOR CO. 1230 Majestic Building Detroit, Mich.

Write To-day

OUR CATALOGUE IS READY FOR MAILING ... WANT ONE?

Remember that Runabout

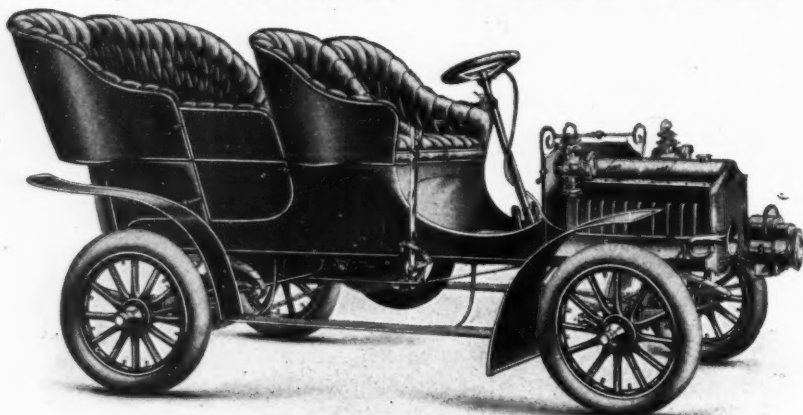
The Powerful DOLSON

The Strongest Car in
America at the Price

\$1500.

COMPLETELY EQUIPPED
AND READY FOR
EXTENDED TOURING

ALL KINDS OF TALKING POINTS AND REAL MERIT



The DOLSON is the strongest, most powerful car in America for its price. It is a hill climber of par excellence, has plenty of speed, easy of control, beautifully designed, handsomely finished and upholstered. Wheel base, 90 inches. Wheels, 30 inches. Tires, 3½ inches front, 4 inches rear. Large, roomy tonneau, seating five persons comfortably.

In design, material, workmanship and specifications, the **DOLSON** compares favorably with high priced cars, and it is listed at a price that enables agents to sell quickly and duplicate orders. We can and will make deliveries as specified.

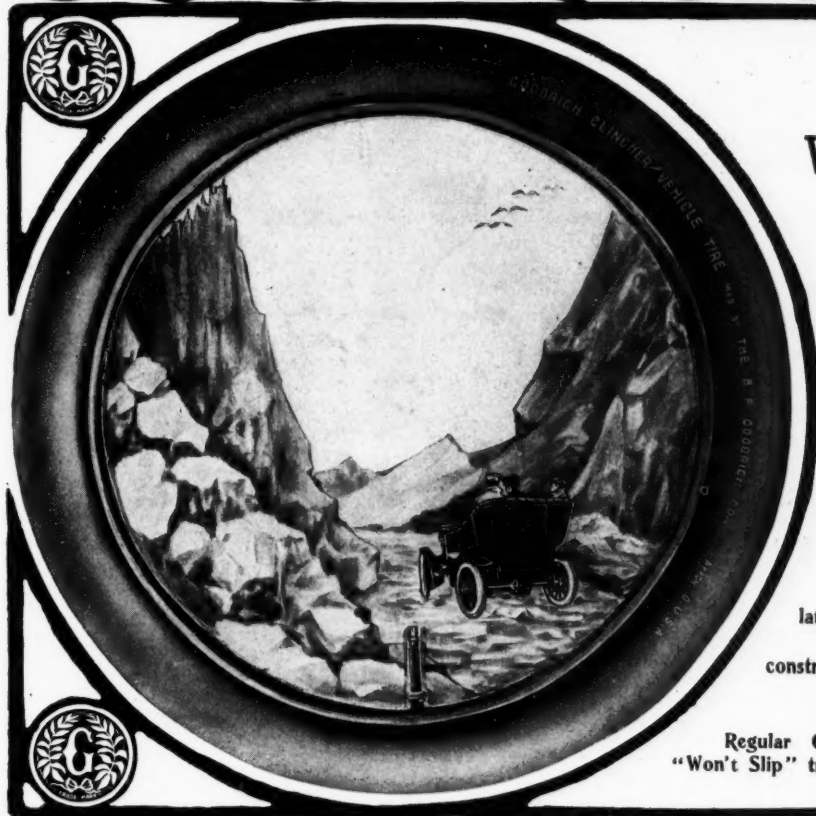
Don't wait too long. Get in line now.
Write for further particulars.

1905 MODEL C. Price, \$1500.00

Including two oil side lamps, acetylene head light, French horn, mats, full tool equipment, ready for extended touring.

JOHN L. DOLSON & SONS, : : Charlotte, Michigan
NEW YORK AGENT: C. E. NEIL, 215-217 West 48th Street

GOODRICH TIRES



Integral Construction vs. Wrapped Tread Construction

The so-called wrapped tread construction is not new. It is old and came into existence only as a makeshift. There are many objections and no advantages to this construction. It was brought about by the necessities of the first builder and has been copied by others.

The Integral Construction (Goodrich) represents the correct and logical method of building tires and is new inasmuch as we are the first manufacturers in the world to make a success of it.

Many others have tried and after failure adopted the wrapped tread construction.

We have just completed by means of an accurate practical machine constructed for the purpose a test of each of the leading tires of the world, and against the best, Goodrich showed 50 per cent greater mileage.

Specify Goodrich Tires on your 1905 car and get the latest and best construction.

Send for pamphlet describing history of wrapped tread construction and advantages of Integral Construction.

The Bailey "Won't Slip" Tire

Regular Goodrich Construction but provided with the Bailey "Won't Slip" tread. Prevents slipping, slewing or skidding.

THE B. F. GOODRICH CO. Akron, Ohio

With the advent of the heavy and swift cars there is now a demand for tires of larger dimensions. We have in stock

36x5

IN CONTINENTAL QUALITY

This large tire can be depended on to bear up under the load safely.

FOR STILL LARGER CARS

we are already prepared to meet the demand, if ordered in advance, with

40x6

With the Wonderful Development of the Automobile Industry, You Can Safely Depend on



CONTINENTAL TIRES



to keep abreast with all the improvements in tire construction and thereby meeting the popular demand and holding its position as the

STANDARD TIRE OF THE WORLD.

A Continental Tire Agency is one of the valuable assets of any dealer.

Make application for it at once to Department M. A.

THE CONTINENTAL CAOUTCHOUC COMPANY,

Factory—Hanover, Germany.

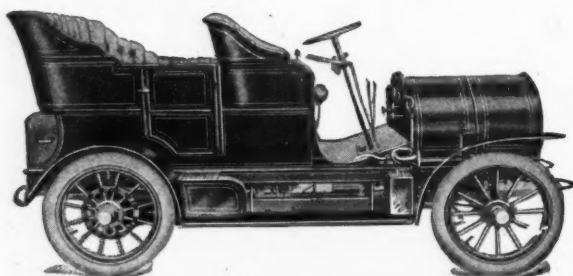
EMIL GROSSMAN, Gen. Mgr., 298 Broadway, New York.

Samson Non-Skid Covers on Continental Tires now in Stock. Send for Price List.

See our Exhibits at Boston, Buffalo and Washington, D. C.

The Excellent....

SIDE DOOR
TONNEAU



PRICE
\$1,500.00

GROUT STEAM CARS

No Noise No Vibration Will not freeze in zero weather
Climb any Hill Speedy and Reliable

Grout Bros. Automobile Co.

280 East Main St., Orange, Mass. Boston Branch—151 Columbus Ave.

“Can’t Get Along Without It”

I have just returned from Los Angeles, where I spent the winter, and find that my subscription to Motor Age has expired. I cannot get along without it, so you will please find enclosed draft for same, and put my name on your list at once.

Yours truly,

E. W. JOY, Wapello, Iowa.

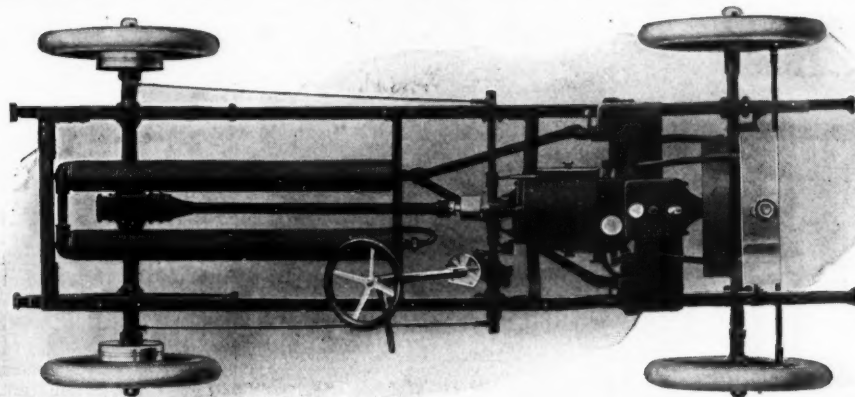
CAN YOU?

The Annual Subscription to MOTOR AGE is only \$2

Subscribers desiring to solicit subscriptions for us should write for our liberal proposition. Show your friends a copy of Motor Age and the work is done.

NORTHERN

WE CLAIM SIMPLICITY==== Here's the Proof



THIS ILLUSTRATES NORTHERN MACHINERY COMPLETE

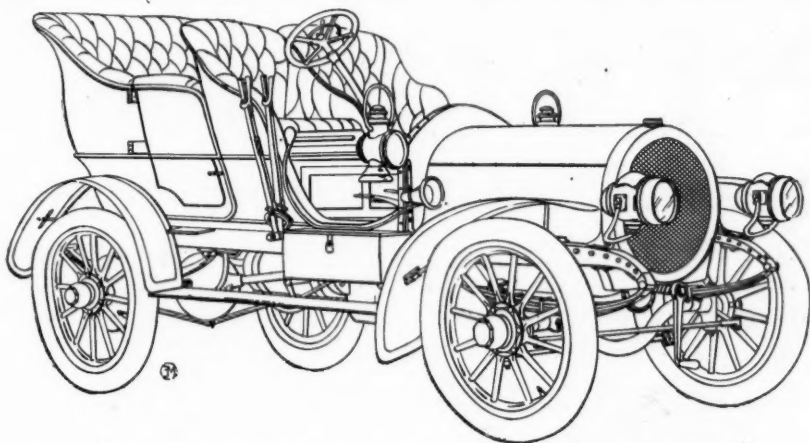
Note the absence of all Wires, Oil Tubes, Chains, Belts, Bolts, Gaskets, Strut Rods and Truss Rods. OUR NEW CATALOGUE will show you illustrations of the best dressed and best finished line of cars on the market at prices within your reach. Ask for Catalogue 14.

NORTHERN MANUFACTURING CO.

DETROIT, MICH., U. S. A.

MEMBER A. L. A. M.

PETER FOGARTY, 142 W. 38th Street, NEW YORK CITY AGENT



NATIONAL Model "C" Gasoline Touring Car

Five passenger, side entrance body, detachable tonneau, best of finish and trimming, new round radiator, oval hood, four cylinder 4 1/4 x 5 vertical, bevel gear drive, double ball-bearing slide gear transmission—direct on high, hardened steel gears, gear-driven commutator, rear wheels revolve on double ball-bearings on outside axle tube, all weight taken off inner axle and differential, spherical gear case, internal expanding metal to metal brakes, pressed steel frame, long wheel base, engine and transmission on sub frame, double steering connections.

24-30 H. P.

Price, \$2,500.

DISTRIBUTORS

New York: Homan & Shulz Co., Broadway and Thirty-eighth St.

Boston: Linscott Motor Co., 163 Columbus Ave.

Chicago: Hayden Automobile Co., 1337 Michigan Ave.

St. Louis: Westminster Automobile Co., 4290 Olive St.

San Francisco: F. A. Jacobs, 1331 Market St.

Springfield, Mass.: Fowler Automobile Co.

NATIONAL MOTOR VEHICLE CO.

1006 East Twenty-second Street

INDIANAPOLIS, INDIANA



What Do You Want

in an Automobile? Is it service or adventure? A four to sixteen mile-an-hour speed always at your command, or a racing machine?

National Electric Vehicles

are thoroughly practical; simple in construction. Easy for any one to handle; noiseless, smooth running; go at desired road speed, yet under perfect control always. Ample battery equipment—the most powerful electric made. Our Catalogue shows every style.

Electrics

THE AUTO-CLE

THIS WRENCH SAVES YOU TIME AND TROUBLE

It is a complete set of wrenches in a single tool

The AUTO-CLE Wrench is a French patent and is universally used by French automobile owners.

It is a ratchet wrench; works in either direction.

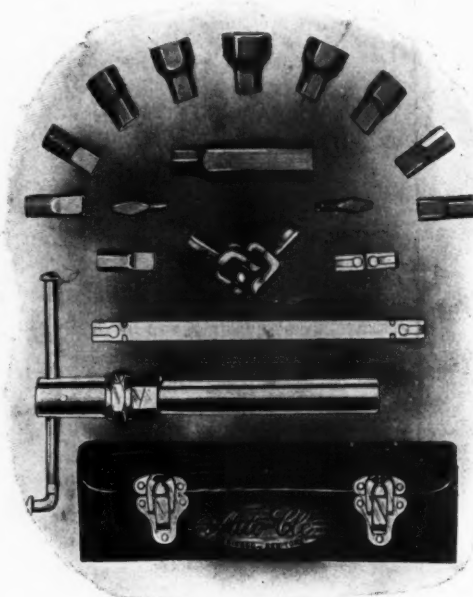
Has a swivel or universal joint, extension rods and screw drivers.

A complete set of sockets are furnished which fit any nut or bolt on any machine.

This wrench can be used at any angle and makes the most difficult nuts and bolts perfectly accessible.

No automobile owner can afford to be without one.

Send for circular.



The Advantages of the Auto-Cle are:

1. Will fit any adjusting nut on any automobile.
2. Is a ratchet wrench and only requires a small space in which to operate.
3. Ratchet works in either direction by slipping collar up or down on ratchet face.
4. Can be used without ratchet movement.
5. Has a universal attachment, permitting use at any angle; avoids getting under machine.
6. Extension rod that reaches into crank case and inaccessible places.
7. Long socket for removing sparking plug.
8. Great leverage on account of adjustable handle.
9. Is simple and strong; will not get out of order.
10. All parts of the wrench are kept together in leather case, and there is no possibility of losing or misplacing the wrench, as is the case when various sizes of wrenches are carried.

We are the Sole Manufacturers in the United States under the French Patents

RAILWAY APPLIANCES COMPANY

1175 Old Colony Building

CHICAGO

NON-SKIDDING

SAMSON

Leather Tire and Protector

Paris

Berlin

London

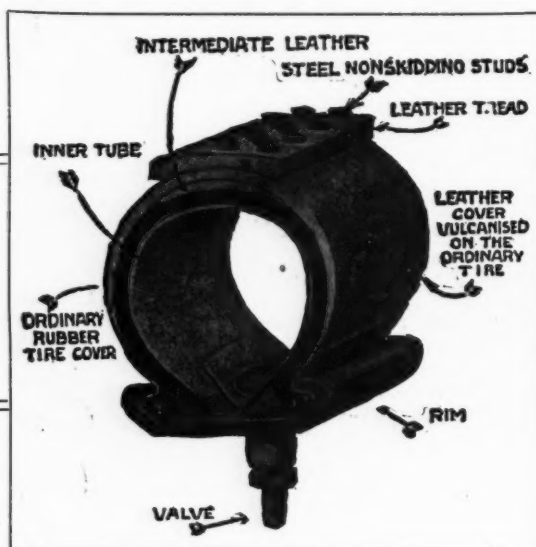
Brussels

Vienna

NON-PUNCTURABLE

Chicago Agent

J. B. McKEAGUE
1461 Michigan Ave.
Chicago



Boston Agent

JAMES COGGESHALL
16 Columbus Ave.
Boston

A. E. GALLIEN, Mgr.

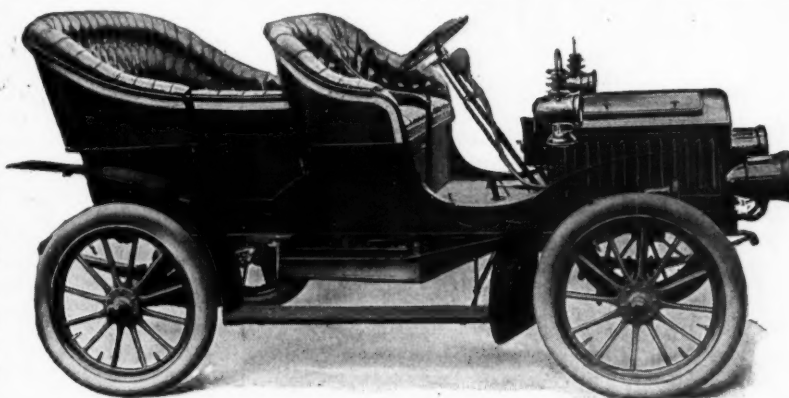
12 West Thirty-third Street, New York City
Opposite The Waldorf

Two Impulses with Every Revolution

This, the famous **Elmore Pathfinder**, which has demonstrated beyond a doubt the superiority of the two-cycle engine over the four-cycle engine. The most significant feature of the American Automobile situation to-day is the complete triumph

the impulse-every-revolution idea, or with two cylinders, two impulses every revolution, as exemplified in the **Elmore**. That the **Elmore** does produce a constant torque; that it does utilize every particle of power and put a stop to waste energy; that it will take the steepest hill or roughest road at high speed; and that it has the most reliable self-starting engine in the world. For each and

every one of these claims overwhelming proof has been produced. The whole trend of expert and popular opinion is rapidly being directed toward the two-cycle engine.



You owe it to yourself to see this car which will astonish you, not only by its fine appearance, but by its excess power and its extraordinary control on the high speed.

Send for our full line of literature: The booklet illustrating the 6,000 mile trip; our catalogue; explanation of engine, and the opinions of people who have used our cars—all sent free, or if you wish, we will send you a 10x12

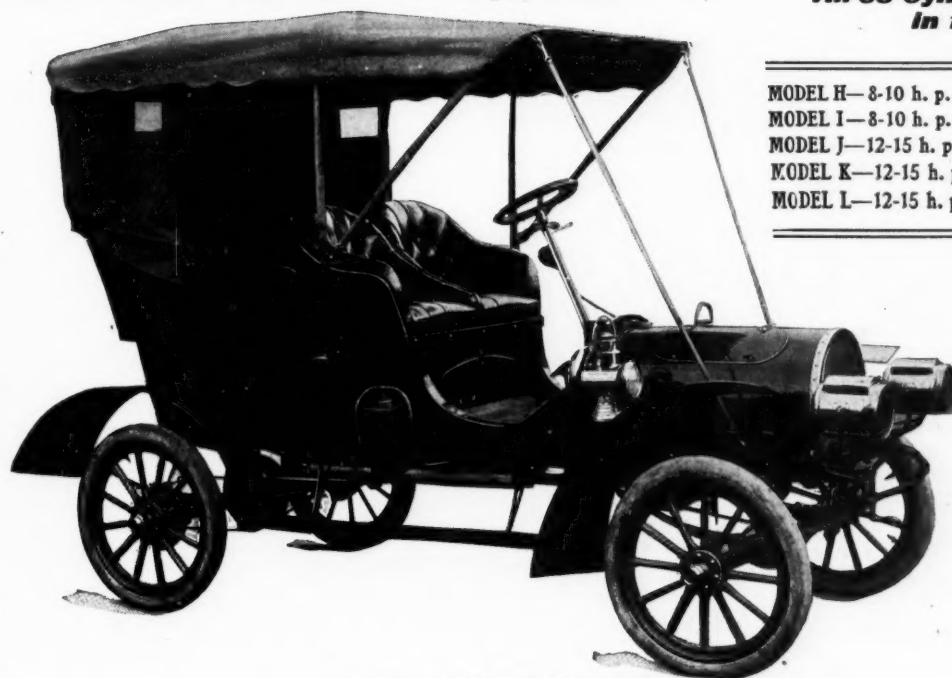
Photograph of the **PATHFINDER** on receipt of 10 cents in stamps.

Elmore Manufacturing Company
804 Amanda Street
CLYDE, OHIO

Members of the Association of Licensed Automobile Manufacturers.

CAMERON King of all Weathers

*Three cylinders--Air cooled--Motor
in front--Shaft drive*



Model L, 12-15 h. p., Side Entrance

MODEL H—8-10 h. p. 2-cylinder Runabout	\$ 675
MODEL I—8-10 h. p. 2-cylinder Light Tonneau	775
MODEL J—12-15 h. p. 3-cylinder Special Surrey	1,050
MODEL K—12-15 h. p. 3-cylinder Runabout	950
MODEL L—12-15 h. p. 4-cylinder Side Entrance Tonneau	1,050

Branches

New England Branch
73 Tremont St., Boston

New York Branch
Fulton St., New York

Western Branch
431 Wabash Ave., Chicago

Pacific Coast Branch
San Francisco

THE JAMES BROWN MACHINE COMPANY
PAWTUCKET
Established 1829
RHODE ISLAND

Autocar

Type VIII
\$1400

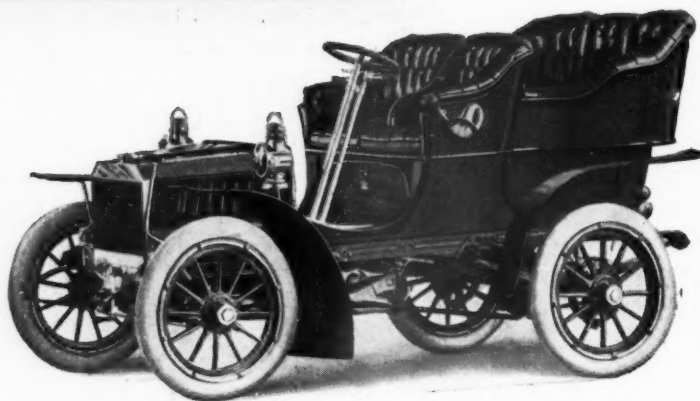
A Wonderful Value

Type VIII Autocar at \$1400 represents a wonderful automobile value. This type is the foundation of the Autocar's enviable reputation. It is a car built upon honor throughout. There is nothing experimental about it—nothing uncertain in its construction. During 1904 Type VIII was tested on all sorts of American roads—under all kinds of conditions. It has proved its reliability and efficiency so well as to put Autocar Type VIII in the very front of its class.

Last season Type VIII was sold for \$1700 and was considered an unsurpassed value. The price of Type VIII is now \$1400 because, having built this model for so long we can now build it more economically. For the man who wants a thoroughly reliable four-passenger car at a moderate price, Type VIII at \$1400 is his opportunity.

Catalogue giving full description of Type VIII, Type X Runabout, and Type XI Four Cylinder Car, with dealer's name, sent free upon request.

THE AUTOCAR COMPANY, Ardmore, Pa.
Member Association Licensed Automobile Manufacturers.



Specifications, Type VIII:

Horizontal two-cylinder opposed engine—no noticeable vibration. Twelve actual horse-power. Oiled automatically. Water cooled.

Transmission, sliding gear type. Three speeds forward and a reverse. Ball bearing, shaft drive. No greasy, gritty chain. Front and rear construction has ball bearings throughout. Gasoline tank holds 10 gallons—sufficient on good roads for 200 miles.

Tonneau is removable. Front seat divided. Engine and transmission case are accessible from above without disturbing body.



STUDEBAKER

No. 9503 STUDEBAKER 4-CYLINDER GASOLINE TOURING CAR
BUILT FOR STRENGTH, SPEED AND ENDURANCE

Ease of control and operation unsurpassed. Each vital part tested beyond any possible demand. : : :
"STUDEBAKER QUALITY" THROUGHOUT

Studebaker Automobile Co. SOUTH BEND, INDIANA
Members of the Association of Licensed Automobile Manufacturers.

BRANCH HOUSES:

New York City, Broadway and 7th Ave.,
at 48th St.
Denver, Col., cor. 15th and Blake Sts.
Chicago, Ill., 378-388 Wabash Ave.
Salt Lake City, Utah, 157-159 State St.

Kansas City, Mo., 810-814 Walnut St.
Portland, Ore., 330-336 E. Morrison St.
San Francisco, Cal., cor. Market and 10th
Sts.
Dallas, Texas, 317-319 Elm St.

AGENCIES IN ALL PRINCIPAL CITIES

MODEL 9503

SPECIFICATIONS:

MOTOR: Four-cylinder vertical, 20 to 24 horsepower. **TRANSMISSION:** Sliding Gears. **SPEEDS:** Three forward and one reverse; four to forty-five miles per hour. **STEERING:** By wheel and irreversible. **BRAKES:** Two entirely independent systems. Hand lever, internal expanding on both rear hubs; foot lever on drive shaft. **IGNITION:** Jump spark with dynamo and supplementary storage batteries. **CARBURETER:** Float feed with 1905 refinements. **COOLING:** By pump and cellular radiator. **GASOLINE CAPACITY:** 14 gallons. **LUBRICATION:** Positive with mechanical oiler, with sights located on dash. **COMMUTATOR:** Accessible and maximum wearing capacity. **FRAME:** Pressed steel. **WHEEL BASE:** 96 inches. **VALVES:** Mechanically actuated. **AXLES:** Front axle tubular steel; rear axle so arranged that no strains from the weight of the car fall on the driving shafts.

WRITE FOR OUR CATALOGUE

A fair comparison



A true idea of the value of Franklin cars is obtained, not by comparing them with cars of similar rated horsepower—but by comparing them with cars of similar actual ability.

Many intending purchasers would save disappointment and needless expense if they were aware of the fact that Franklin 12-horsepower

Light Touring Cars, costing \$1650 and \$1700, have all the speed and carrying capacity of the average heavy touring car of 20 rated horsepower, costing \$2000.

Franklin Light Touring Cars not only give fully equal touring ability at a lower price, but cost far less for operating and maintenance than heavier cars.

Weight uses up fuel to move it and rapidly wears out tires. The difference in tire bills alone—all other things being equal—would make Franklin Cars the most economical cars in the world.

Six Models for 1905

Runabout. Light Touring Cars, fixed and detachable tonneaus, side entrance or rear entrance. High-power side-door touring cars.

Send for catalogue describing them in detail.

H. H. FRANKLIN MFG. CO.

Syracuse, N. Y.

Member Association Licensed Automobile Manufacturers

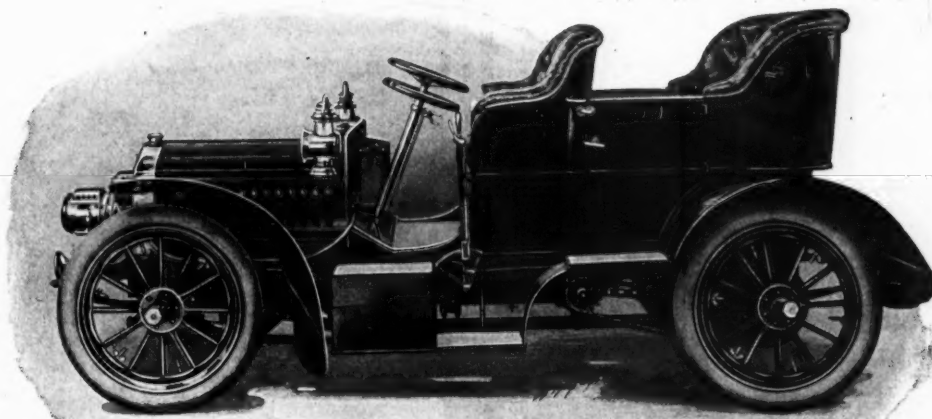
THE
POWERFUL
LIGHTWEIGHT

Compound

GASOLINE
TOURING
CAR

The MOST HORSE POWER for the WEIGHT
The MOST AUTOMOBILE for the MONEY

Speedy
and
Reliable
Actual
Weight
2150



No
Muffler
No
Noise
JUST
POWER

MODEL 3. 24-28 HORSE POWER, \$2,000.00

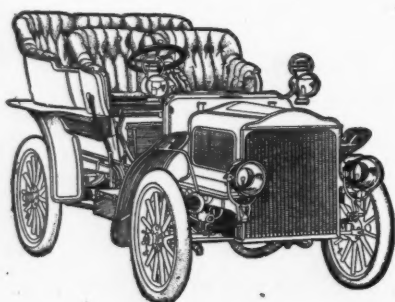
Guaranteed to carry its full Load (5 persons) over any road or up any hill upon which its wheels can secure traction

THE E. H. V. CO.,

MIDDLETOWN, CONN.

The INCOMPARABLE WHITE

**The Car
for Service.**



PROOFS.

First Class Certificates in all endurance runs and reliability trials held in this country and abroad.

A series of track victories dating from the year 1901.

Most creditable honors in the hill-climbing contests held throughout the country.

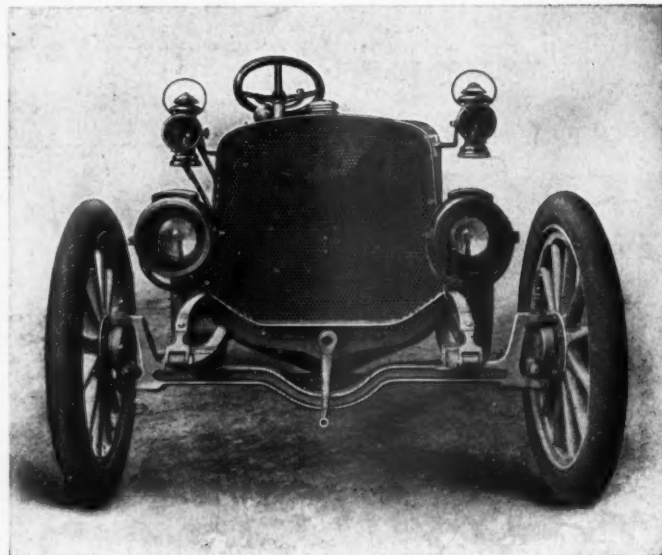
Awarded the Grand Prize at the World's Fair, St. Louis.

And furthermore:

Numerous White owners, throughout the country find this car as serviceable for touring on the roughest roads as it is on the city's boulevards. Write for Bulletin No. 8—a readable description of the records of the White Car during the last four years.

WHITE Sewing Machine **COMPANY**

Cleveland, Ohio.



PUTTING UP A GOOD FRONT

is in keeping with every other point in *Lozier* exclusively high-grade construction. Note the strength and lightness of *The Lozier Motor Car*, and the manner in which every available inch of radiating surface is made to do duty. See how hungry it is to eat up the road. Send for booklet describing our 30-35 horsepower High-Grade Motor Car.

MOTOR BOAT AGENTS WRITE FOR OUR MOTOR BOAT DISCOUNTS AND FOR A COPY OF "THE PROPELLER"

LOZIER

THE LOZIER MOTOR COMPANY
Suite 6 1 BROADWAY NEW YORK

FIRST IN THE RACE



The RUSHMORE Light
WINS Every TIME
RUSHMORE DYNAMO WORKS
PLAINFIELD, N. J.



DIETZ

RUNABOUT SEARCH - LIGHT

Is the Headlight for Small Cars

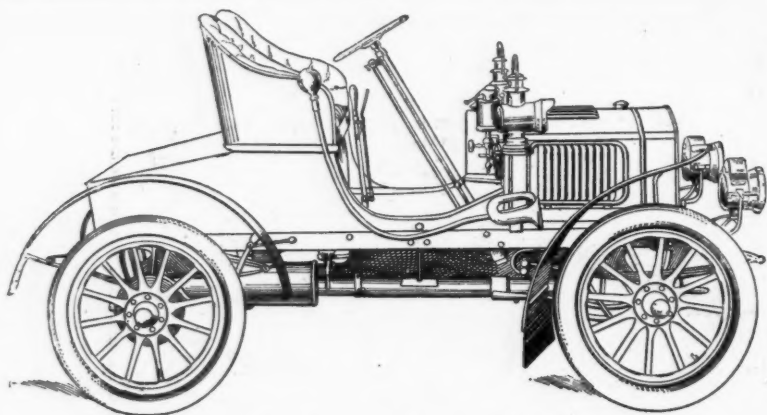
(WITH SELF-CONTAINED GENERATOR)

It is small and compact, holds 3-4 lb. of carbide, runs 10 hours with one filling, and can be turned out and burned again and again without material waste of carbide. Simplest construction of any Acetylene Lamp, and certain in operation. Send for circular. Sold by all live dealers.

R. E. Dietz Company

37 LAIGHT ST., NEW YORK

ESTABLISHED 1840



Acme Motor Car Company
READING, PA.

It may interest you to know why our different models made such a hit—for instance, our Type X Runabout—

16-H. P., 2-cylinder vertical engine.
3 speeds forward and reverse, ball bearing, sliding gear transmission.

Bevel gear drive.

Automatic carbureter.

Weight, 1175 lbs.

And the prettiest designed little car ever built.

Boston Motor Co.,
No. 43 Columbus Avenue,
Boston, Mass.,
Mass. Distributors.
Liberty Automobile Co.,
Nos. 133-140 Beatty St.,
Pittsburg, Pa.

Acme Motor Car Co. of N.Y.,
No. 941 8th Avenue,
New York, N. Y.
N. Y. and N. J. Distributors.
J. W. Mears,
No. 9 Ocean Parkway,
Brooklyn, N. Y.

Devlin & Co.,
No. 1407 Michigan Avenue,
Chicago, Ill.
Western Distributors.
Southern Automobile Co.,
Atlanta, Ga.

The \$500 Gale



WE wish to state that because this car is sold at so low a figure, is no sign that it is cheap. Every part is the best that we can make or buy, and we will replace any defective parts free of charge at any time inside of one year after purchase.

Eight H. P., horizontal single cylinder 5"x6"; weight, 1,100 lbs.; 72" wheel base; 28"x3" tires. New-type transmission; two speeds, forward and reverse; absolutely oil tight; cone clutch on high speed; new-type bands on low and back up; no gears running on high speed. Pump direct connected to engine. Gasoline and water tanks hold five gallons each. Kingston carbureter, Dow vibrator coil, Brown & Lipe differential, diamond chain. Speed, 30 miles per hour. Frame, angle iron. Body can be tipped up by loosening two nuts in floor of car and removing cotter pin. Car can be run without body, as all wires, connections, etc., are on the chassis.

Chicago Agents: MEAD MOTOR CO.,
1245-45 Wabash Ave.

THE WESTERN TOOL WORKS, Galesburg, Ill.

...THE...

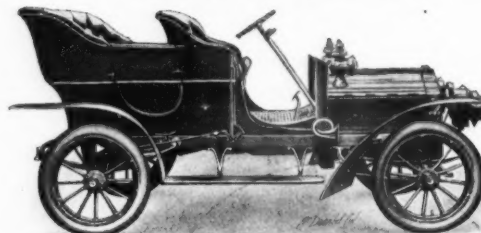
Stoddard-Dayton

A FREELY TALKED-OF CAR

Embodying every detail of modern mechanical construction and beauty of design.

4 Cylinder Vertical Motor. 25 Horse Power.
3 Speeds and Reverse. Sliding Gear Transmission. 1800 Pounds.

\$2,000.00



"That Car of Supreme Worth."

The Dayton Motor Car Co.
DAYTON, OHIO

Chicago and Vicinity
McDuffee Auto Co.
1449 Michigan Ave.
Chicago

New York and Vicinity
Maxwell-Briscoe, Inc.
317-319 W. 59th St.
New York

Have you seen the new KOKOMO Mechanically-Attached Automobile Tire?



*It is just what you
have been looking for*

Quickly attached and detached.
Creeping and Rim Cutting entirely avoided.
Made of the very best material and workmanship throughout.
Write us for full particulars.

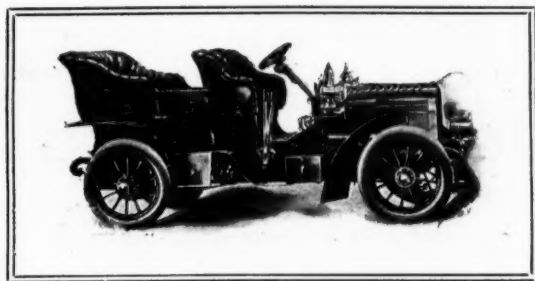
Kokomo Rubber Co., Kokomo, Ind.





For more than fifty years the product of the firm of Corbin, New Britain, Conn., has stood for mechanical excellence.

THE CORBIN CAR



is made by this same organization.

All the resources of this great more-than-half-century-old institution are back of it. Is this significant?

TWO MODELS

16-20 h. p.

24-30 h. p.

Both having four cylinder, vertical motors, AIR COOLED by the CORBIN SYSTEM.

Catalog mailed on application.



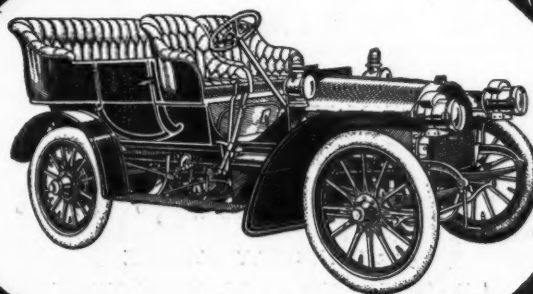
CORBIN MOTOR VEHICLE CORPORATION

Chestnut and Elm Streets

NEW BRITAIN, CONNECTICUT

See our Exhibit at Boston Show

New York Agency, 4 West 38th Street
Boston Agency, 163 Columbus Avenue



Peerless Radiators

are made up of single flanged copper tubes set vertically between a header on top and a tank underneath.

RESULT IS

they are not liable to become leaky—are easy to repair in case of accident—can be quickly and perfectly drained to prevent freezing in winter.

1905 PRICES

24 H.P.	30 H.P.	35 H.P.	60 H.P.
\$3,200	\$3,750	\$4,000	\$6,000

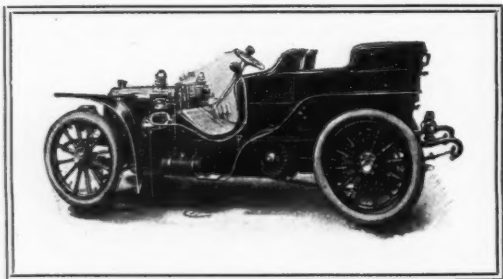
Send for Catalogue now ready.

PEERLESS MOTOR CAR CO.

CLEVELAND, OHIO.

Member A. L. A. M.

L. S. M. & CO. CLEVELAND



The American Mercedes

The Mercedes transplanted, that's all. But you save import duties on finished parts and agents' commissions, by buying it.

One size: 40-45 h. p.

Price: \$7,500—

The same price as the Mercedes in Paris.

Daimler Mfg. Co.

973 STEINWAY AVENUE
LONG ISLAND CITY, NEW YORK

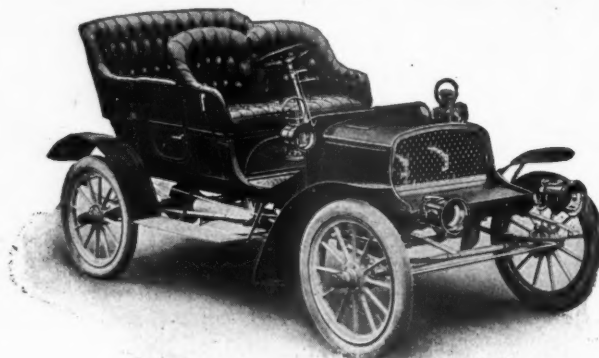
New York City Garage, 10 W. 60th Street

Our booklet tells how we do it.

PREMIERS

(AIR-COOLED)

Nothing Omitted Which Tends to Make Them Perfect
Nothing Too Good to Enter Into Them



EMBRACE THE

BEST OF MATERIAL

BEST OF WORKMANSHIP

BEST OF DESIGN

CONSEQUENTLY GIVE BEST RESULTS

WRITE FOR DESCRIPTIVE CATALOGUE

PREMIER MOTOR MFG. CO.

1001 Georgia St.

Indianapolis, Ind.

IT MAKES YOU SWEAR

To take dust from Neighbor Jones because he drives a Thomas "Flyer" and you don't. You almost hate the pretty curved lines as pictured below but it starts you thinking and those thoughts have an important bearing on your next purchase, which is pretty apt to be a Thomas "Flyer".

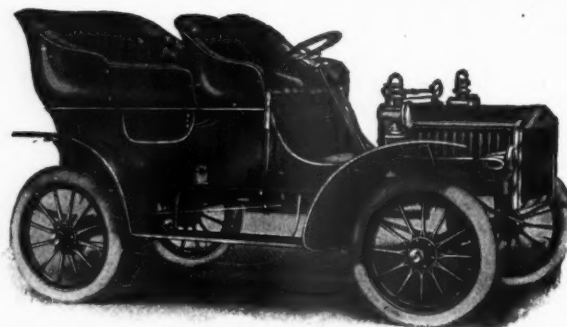


Thomas 40 Horse Chassis (4 Cylinders) .	\$2,750
Thomas 40 Horse "Flyer" (4 Cylinders) .	3,000
Thomas 50 Horse "Flyer" (4 Cylinders)	3,500
Thomas 50 Horse Limousine (4 Cylinders)	4,500

E. R. THOMAS MOTOR CO.,

Members of Association of Licensed Automobile Manufacturers,
1202 Niagara Street BUFFALO, N. Y., U. S. A.

THE MICHIGAN



Model E, \$1250—Carries Five Persons.

The Michigan cars are **safe** ones to drive, and this is more than can be said of the majority of cars of about the same price. They are usually provided with one brake, leaving one at the mercy of the reverse (if the engine doesn't stop just at the critical moment) should this one brake give way. This is a **serious** matter, involving the **safety** and even the **lives** of the occupants of the machine.

Michigans are **all** supplied with a brake band around the differential, which is sufficient for ordinary use, and with internal expanding brakes, lined with wood fibre, on both rear wheels. Both brakes can be used at the same time, giving **perfect control** of the car under **all conditions**, making the Michigan a **safe** car to drive. This is just **one** good "Michigan" point. There are lots of 'em.

Our Catalog tells about it.

Michigan Automobile Co., Ltd.

KALAMAZOO, MICH.

Punctures Come

alike to the just and the unjust. The construction of Fisk tires proves that they cannot be easily punctured, but when punctures come to them, the user is able to appreciate one of the many advantages of the Fisk mechanical fastening, and the Fisk flat rim.



No Crowbars Needed

either to remove or replace a Fisk Tire. It stays on until it is desired to remove it, and then it slips off like a shoe.

Get our booklet and inform yourself.
It's free for the asking.

THE FISK RUBBER COMPANY

Chicopee Falls, Mass.

BRANCHES—New York: 754-756 Seventh Ave.; Chicago: 1251 Michigan Ave.

BOSTON,	SAN FRANCISCO,	MINNEAPOLIS,
SPRINGFIELD,	PHILADELPHIA,	DENVER,
SYRACUSE,	ATLANTA,	LOS ANGELES,
BUFFALO,	ST. LOUIS,	LONDON,
DETROIT,	OMAHA,	MONTREAL, CAN.
CLEVELAND,	KANSAS CITY,	

INVESTIGATE THE CLAIMS

\$35.00

MADE
FOR THE

\$35.00



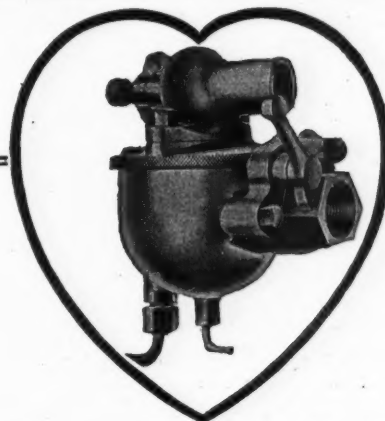
We guarantee every statement we make to be absolutely correct.

Over one thousand users of the **PREST-O-LITE** gas tanks since Oct. 1, 1904. Not a single one dissatisfied.

The whole story cut short and boiled down is that we furnish enough Pure Acetylene Gas ready for instant use to run two large head lights for five to six weeks average use. Simply turn it on when you want it; turn it off when you don't. When the tank is empty exchange it for a full one with any of our Three Hundred Agents.

Ask your dealer or get our catalog.

THE CONCENTRATED ACETYLENE CO.
Indianapolis, Ind.



THE HEART OF THE AUTOMOBILE

The Schebler Carbureter

This is the model No. 1 racing Schebler, which was attached to the automobile that broke all world's records for light and middle weight cars and defeated the big 90 h. p. foreign cars, at the Empire City track, Nov. 8th.

If you want to get full power and speed of your engine, besides having a carbureter that gives a perfect mixture at all engine speeds and is not affected by weather conditions, buy the **SCHLEBLER**. It is high priced but it does the work.

Special connection for attaching the Schebler to Oldsmobiles, any model.
Special size carbureter for the Ford two and four-cylinder cars.

F. H. WHEELER,

Sales Agent for the World :: INDIANAPOLIS, INDIANA

E. J. Edmond, 52 W. 43rd St., New York agent.
P. J. Dasey, 435 Wabash Ave., Chicago agent.
Los Angeles Auto Co., Southern California agents.
E. B. Belcher, 26 Green St., Malden, Mass., Boston agent.



Locomobile GASOLENE CARS

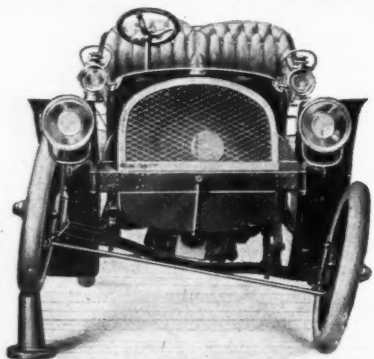
improve with age—do not rattle to pieces.
One of our 1904 stock cars recently defeated two 1905 models of other makes of greater advertised horse-power.

1905 cars are all of the four-cylinder type with side entrance tonneaus.
Prices \$2800 to \$7500.

THE *Locomobile* COMPANY OF AMERICA, BRIDGEPORT, CONN.
Member Association of Licensed Automobile Manufacturers.
New York, Broadway and 76th St. Boston, 15 Berkeley St.
Philadelphia, 249 N. Broad St. Chicago, 1354 Michigan Ave.

THE MARMON

...A Mechanical Masterpiece...



THE ONLY CAR whose perfect flexibility can be demonstrated as it is in this picture, because it is the only car embodying

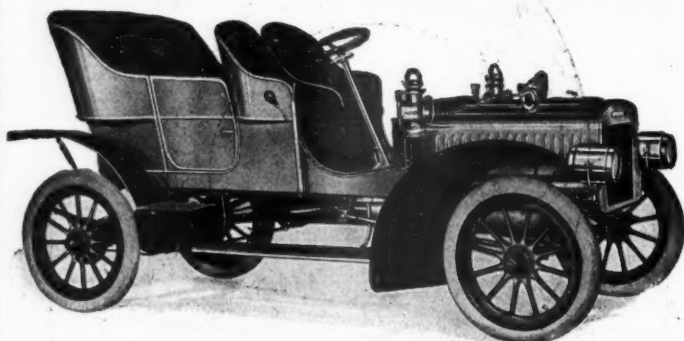
DOUBLE THREE-POINT SUSPENSION

Cast Aluminum Body and simple accessible oil-tight mechanism on separate frames, EACH suspended on three points. Eliminates all the binding strains inevitable in the customary rigid four-point suspension. Means fewer parts, longer life, and greater efficiency. The gentle sway of the Marmon body over the roughest roads is unknown in *any other car*.

Perfectly rigid shaft drive, without Cardan joints; quiet, unique air-cooled motor; positive automatic force lubrication that absolutely marks the end of oil troubles. Booklet No. 1 describes it.

NORDYKE & MARMON COMPANY
Established 1851 Indianapolis, Indiana

The Moline



Model "B" Touring Car.

The Power is High.
18 Actual H.P.

The Weight is Right.
1700 Pounds.

The Price is Low.
\$1,600.00.

Distinguishing features are:—Substantial construction. Simplicity of Motor. Accessibility of working parts. Easy Side Entrance Body.

SPECIFICATIONS:—Four Cylinder Vertical Motor (4-in. bore, 4½-in. stroke). Shaft Drive to Bevel Gear Axle. 105-in. Wheel Base. Standard Tread, 3½-in. Tires on 32-in. Wheels. Three Point Spring Suspension.

Model "D" is a smaller rig, similar in general design to the Touring Car. Double Opposed Motor (4½-in. bore and stroke), 86-in. Wheel Base. Standard Tread. 30-in. Wheels. Quiet, easy running and strong on hills.

Full particulars on request.

Moline Automobile Co.
EAST MOLINE, ILLINOIS

Agents:—Mead Motor Co., Chicago.
Buck Auto Cgo. & Implt. Co., Davenport, Iowa.
Mathewson Automobile Co., Denver, Colo.
Wm. Gregory, Los Angeles, Cal.
The Oscar Lear Automobile Company, Columbus, Ohio



UNIVERSAL GRIP A WRENCH AND THREAD CUTTER



Our Motto: "MONEY BACK IF NOT SATISFACTORY"

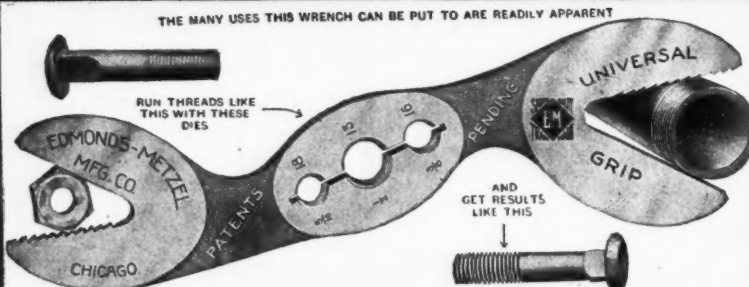
Frosted Nickel, Non-Rusting, Style "A", 75c Mailed

Quadruple Nickel, Never Rust, Style "B," \$1.00 Mailed

Sent Prepaid at this Price

Special Prices to Dealers, Jobbers and Agents

SELLS ON SIGHT



ESPECIALLY TOUGHENED CARBON STEEL AND WORKMANSHIP PROTECTED BY OUR GUARANTEE.

THE MOST HANDY AUTO WRENCH MADE

Length, 8 in., Grips from 1-4 to 1 1-8 in. Diameters

Always Ready and Indestructible

Material and Workmanship Guaranteed

A Necessity with Every Machine

SELLS ON SIGHT

EDMONDS-METZEL MFG. COMPANY, 149-159 South Jefferson Street
WE ARE THE MANUFACTURERS ...CHICAGO...





I AM ON THE INSIDE

of the Automobile Tire business and can recover, repair and rebuild your Continental, Michelin, or American tires, and make them as good as new. I will apply wrapped smooth or rough treads of rubber, either open, steam cured, or vapor cured, on by my secret processes.

I am the originator, inventor and owner in the United States and Canada of non-skidding devices for Automobile Tires.

The Non-Skidding Covers which I apply to old or new tires are made right here in the United States in my factory, and sold all over the world. They are far superior to any foreign make, as they are made from a superior grade of leather, from specially selected hides, steel hardened rivets, and leather and asbestos strips to overcome heat from friction at high speed.

My PEBBLE and ALLIGATOR NON-SKID RUBBER COVERS are the fastest covers in the world to-day.

The patented "HERCULES" LEATHER NON-SKID COVER can be applied to solid, cushion or pneumatic tires of any make or size.

Leather bead strips and leather linings for your tires will save you dollars.

A GOLDEN OPPORTUNITY FOR SMALL INVESTORS

I am installing plants for the proper repairing and rebuilding of Automobile Tires and for the application of "HERCULES" LEATHER NON-SKID COVERS in every large city in the United States and Canada.

On an investment of \$2000 (two thousand dollars), which covers the complete installation of such a plant with full instructions for the application of all covers by my secret processes, I can guarantee returns of \$15,000 to \$20,000 annually. But one plant will be installed in each city. Chicago and Milwaukee already sold.

Write today for my proposition.

My booklet price list is FREE TO YOU, and I have a FEW Auto Show Souvenirs for polite inquirers.—FREDERICK E. McEWEN, MGR.

The Republic Rubber Tire and Shoe Co.
138 WEST 52d ST. NEW YORK

Knox Waterless Commercial Cars



SUPERB IN STYLE AND FINISH

There are more Knox Commercial Cars in use today than of all other makes of Gasoline Commercial Cars combined. The moral is plain. It's business, simply business. It pays. Besides an annual saving of hundreds of dollars, Knox Cars serve as a wonderful drawing-card and attract attention wherever they go. There's BEAUTY as well as BUSINESS in every line. Knox Cars stand the rigors of Winter as easily as the heat of Summer.

**Awarded Grand Prize at the Universal Exposition
St. Louis, 1904.**

KNOX AUTOMOBILE CO., SPRINGFIELD, MASS.

Members Association Licensed Automobile Manufacturers.

Selling Agents in all Principal Cities.

Packard

ENAMELED IGNITION CABLES



ARE

REMARKABLE TROUBLE-SAVERS

Thoroughly and permanently protected by *woven* thread coverings, saturated with flexible enamel films, set by high heat.

Unaffected by heat, grease, oil or water.

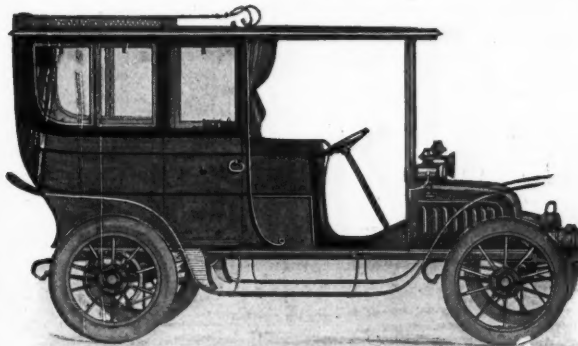
Send for Booklet "G"

THE PACKARD ELECTRIC COMPANY

WARREN, OHIO

KIMBALL

FINEST QUALITY—SPECIAL DESIGN
BODIES AND TOPS



PURCHASE THE CHASSIS Then let us make a Special Body to suit your individual taste.
Inquiry solicited for Bodies and Tops of all kinds for any make of machine.

Bodies on old machines Altered, Changed and Made Over to suit.

All kinds of Repairing and Repainting.

We have clean, dry Storage Rooms where cars are not interfered with or handled when in storage. PRICES REASONABLE.

C. P. KIMBALL & CO., 315 Michigan Ave., Chicago

Rapid Motor Vehicle Co. Detroit

A LIVE PROPOSITION FOR GOOD AGENTS

A light, strong Delivery Wagon of great carrying capacity, driven by our unexcelled, double-opposed motor, ample power rating, sufficient to draw any weight with which it can be loaded, easily and rapidly. Wheels equipped with solid tires. No packing in engine.

Most Delivery Cars which are offered are merely a side issue with their makers, and consist of a flimsy body on a regular touring car chassis.

WE MAKE NOTHING BUT DELIVERY CARS but we make them better, stronger and more practical than any other car on the market. Up-to-date merchants want our car; you ought to be prepared to sell it.

There is still some unassigned territory for good agents. Write to-day for information.

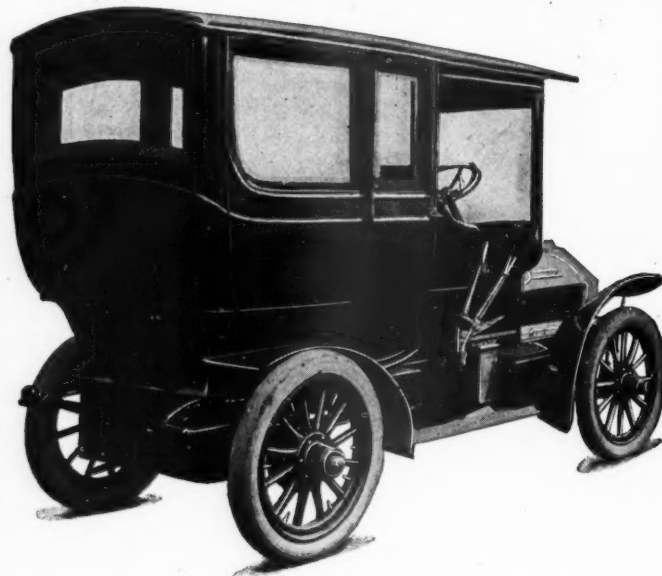
RAPID MOTOR VEHICLE CO.
306 Woodward Avenue, :: DETROIT, MICH.

COL. SPRAGUE'S CANOPIES

BORN IN NORWALK
RAISED EVERYWHERE

The Sprague Umbrella Co.
NORWALK, OHIO

COUPE LIMOUSINE



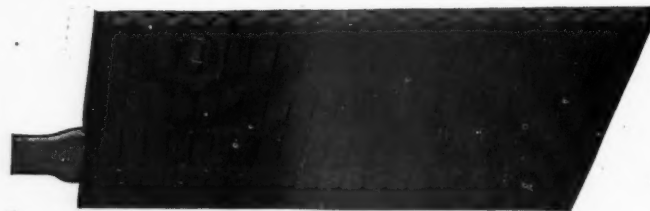
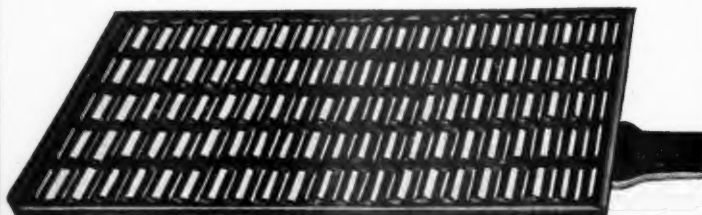
Capacity, five inside, and plenty of room at that. Finish and workmanship GUARANTEED equal to Brewster's best.

Let us tell you all about it in a personal letter—WRITE

The Chisholm-Philips Automobilium Co.,
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EXCLUSIVE AMERICAN AGENTS FOR THE SIMMS-BOSCH MAGNETO. USED ON 90 PER CENT OF ALL EUROPEAN CARS

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NOT AN ALKALINE BATTERY
ESSENTIALLY DIFFERENT FROM OTHER LEAD BATTERIES

The **BESTOGO BATTERY** solves the problem of a practical, efficient and durable accumulator by removing the cause (in place of treating the symptoms) of the weakness and disintegration of the lead cell.

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Issued for the Information of
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This new edition of this handsomely bound and artistically printed book containing illustrations of about 125 gasoline cars will be ready for mailing about March 15th, 1905. The products of the principal manufacturers throughout the United States of America and the Importers of gasoline machines are shown by illustrations and specifications. These specifications form a series of the leading questions that arise in the mind of the purchaser, with the answers thereto in red ink. The questions being uniform, the ease of comparison is obvious, and the purchaser is enabled to select the machines which are best suited to the service required, to his personal taste, or the means at his command.

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Association of Licensed Automobile Mfrs.
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Number 2

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Can you find anyone who changed from using dry cells for ignition to storage batteries, who went back?

Looks as if they liked storage batteries better. BUT they were not necessarily *satisfied*.

Most of them simply liked storage batteries *better*.

The ones that changed and used DURO were the ones that were *satisfied*.

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If there is anyone we want to know it. Better look into DURO.

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The Von Schwarz

None Genuine Without
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Acetylene Burners

SOME ADVANTAGES

They are Recognized Standard Burners the World Over

Accurate in consumption. Free from carbonization and other troubles, and they are

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Best and Cheapest

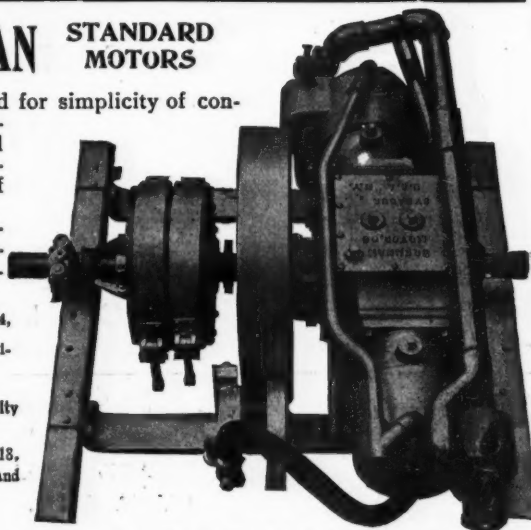
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are unexcelled for simplicity of construction, substantial and large bearings, ease of adjustment. All parts unusually accessible for inspection.

Built in 6, 8, 12, 14, 16 and 20 h. p. Investigation solicited.

We make a specialty of Motors for

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Gentlemen:—The writer has been operating one of your motors, a double cylinder eight horsepower for the past two seasons and wishes to state that the motor has given excellent satisfaction and the repairs on same have been nothing whatever. The motor is being used on a 1,200-lb. runabout automobile. Would state that with the exception of twice I do not know of the motor stopping of its own accord during the season. I am satisfied that I have had excellent good luck and wish to recommend the Brennan motor to any one wishing a motor for an automobile. Yours truly,

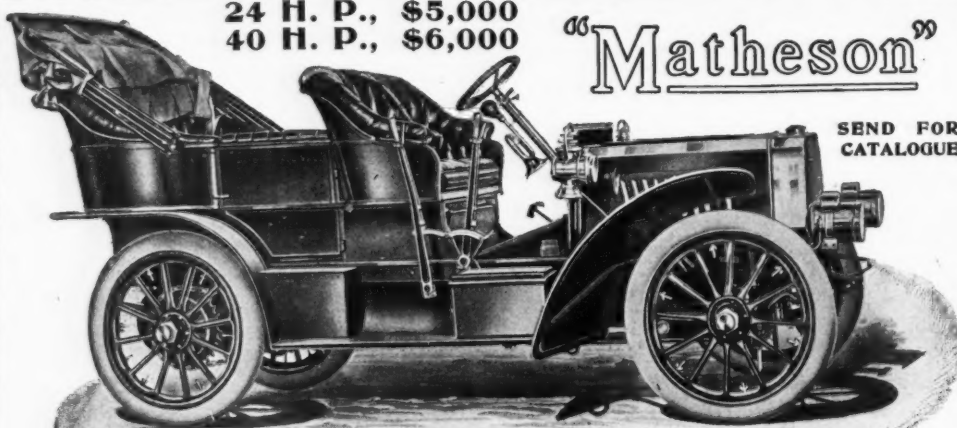
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24 H. P., \$5,000
40 H. P., \$6,000

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CHARACTERISTIC FEATURES:

Self-starting from the seat.
Practically noiseless.
Absence of vibration.
Four-cylinder vertical engine.
Valves, in the head.
Automatic carburetor, never requires adjustment.
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Stand the Test where all others are Knocked Out of Business. Every one we sell brings us more business. This fact shows what they are. The Original and Only Double Insulated Pure Mica Core. All others are worthless imitations. Write for Catalogue "A"

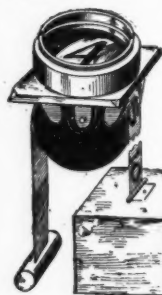
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The FLOAT can be adjusted on the tape to fit any depth of tank up to 18 inches.

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Indestructible, oil-tight, cannot get out of order and will hold against an air pressure of 100 pounds.

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Chicago and Cincinnati

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Ride this way once and you'll ride again—we think.

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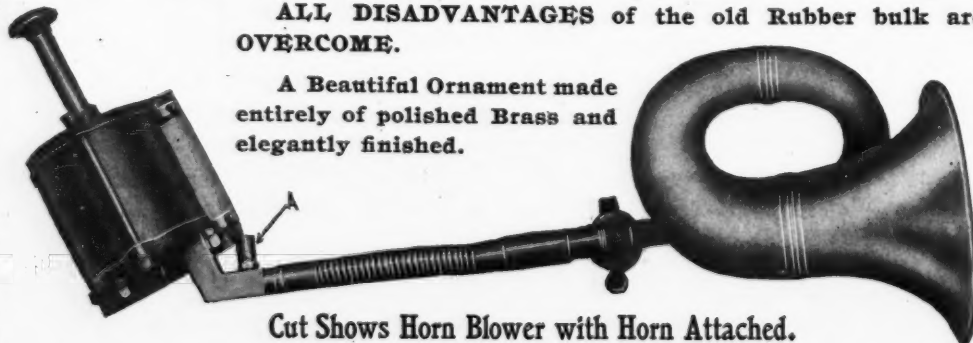
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A Beautiful Ornament made entirely of polished Brass and elegantly finished.



Cut Shows Horn Blower with Horn Attached.

Prevent Accidents

FOR SALE at all Garages and by principal dealers in Auto Supplies.

Will be exhibited and demonstrated at all Automobile Shows in America.

DEALERS who have learned the wisdom of taking time by the forelock will at once get busy.

USE
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FOOT
TO
BLOW
THE
HORN

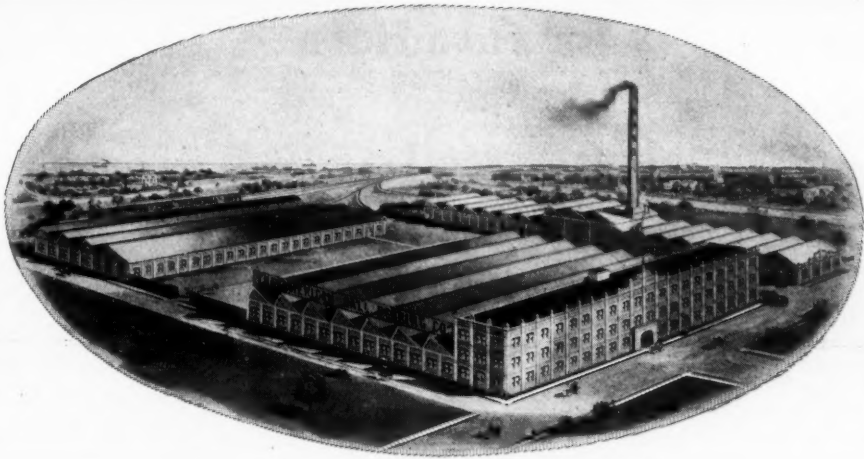
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The output of COMPLETE FRONT and REAR AUTOMOBILE AXLES of this plant exceeds the capacity of all competition combined.

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PRESSED STEEL FRAMES AND UP-TO-DATE PARTS

IT has been our good fortune to secure the three most highly prized assembled frame orders of the season. Our experience in frame manufacture evidently counted largely with these concerns. They didn't consider cost so much as quality and work methods. Besides, they know that ours is the only factory in the country which is equipped for testing complete assembled frames.

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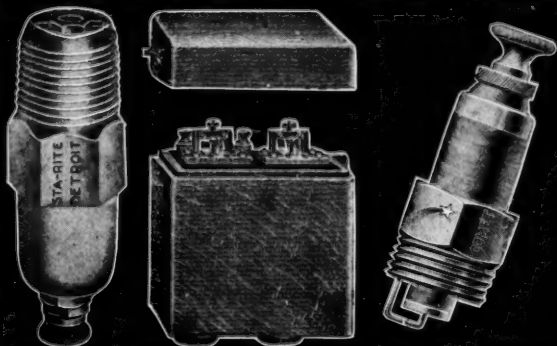
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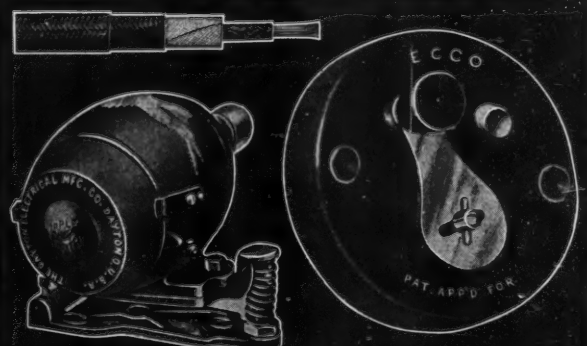
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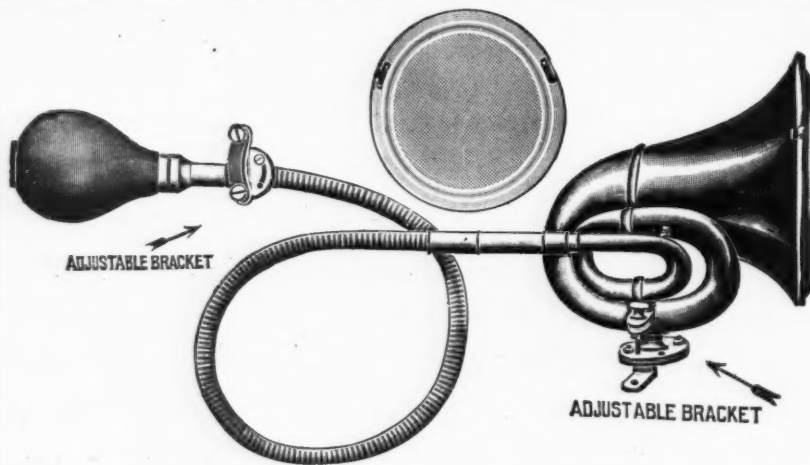


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Applicable to any car. As reliable as a bank vault lock. As long as you have the key your car is safe.

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MUD, SAND, SNOW, ICE

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WEED'S CHAIN TIRE GRIP

Is Part of Your Equipment.

EASY TO PUT ON.
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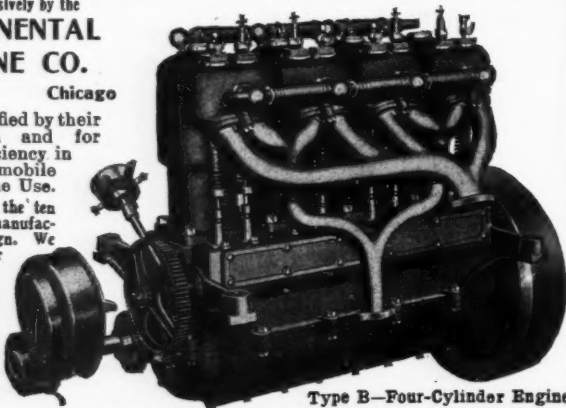
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Mfd. Exclusively by the
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Are identified by their
Perfection and for
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This is one of the ten
types that we manufacture
and design. We
have particular
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Engines and
Transmissions
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Pleasure Vehicles,
Trucks,
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Type B—Four-Cylinder Engine

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"FIRST AID TO AUTOMOBILES"

DISTRIBUTING DEPOTS

...Also at...

Boston

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No. 2
Capacity
6 tons.

No. 3
Capacity
10 to 20
tons.



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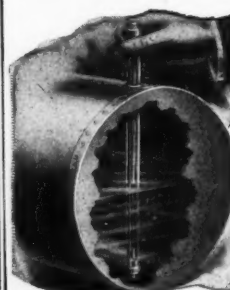
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This tool is designed for drawing off cams, wheels, pulleys etc., and for forcing off sleeves. Can also be used as a jack. No repair shop or tool kit is complete without a Crane Puller. Printed matter on application.

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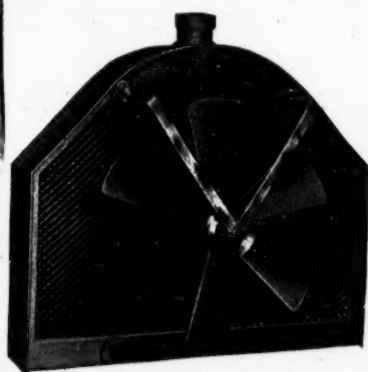
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are not better than the best but they ARE better than the rest. No automobile complete without them. Indispensable to every garage and repair station. For prices and terms, address

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THE WHITLOCK COOLER

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90 Per Cent
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Manufacturers of
HIGH GRADE CARS
FOR 1903-1904-1905

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Any Design or Style of Cooler Made to Order.

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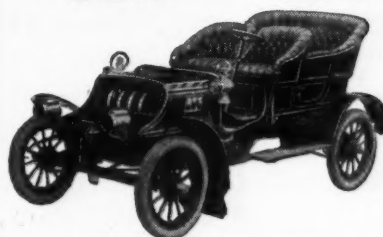
THE MARION CAR

"Air Cooled."
16 Horse Power.
Beautiful Finish.
Easy Riding.
Reliable.

Keeps cool
Develops the power.
"Seeing is believing."
A trial proves it.
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"1905 MODEL" NOW READY

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MODELS	{ RUNABOUT (15 H. P.)	\$900.00
	{ SIDE ENTRANCE TONNEAU	1,050.00
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Acme Improved 1905

NO BACK
PRESSURE

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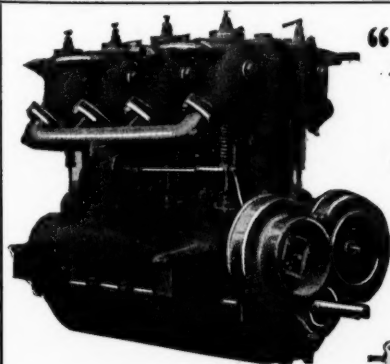
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Simple
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6 Pieces

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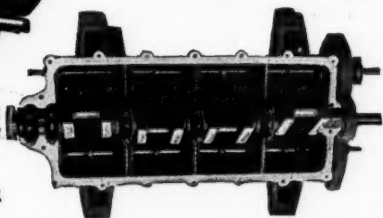
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Gas, Gasoline and Kerosene

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Cyclometers, Odometers, Tachometers, Counters and Fine Castings.

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MELLOW
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WARNS
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A perfect Horn for Automobiles, gasoline or steam. Blows a full blast from the exhaust with less than one pound pressure. Can be attached to the air tank or blown by steam direct. Its tone is full and clear, it gives as strong a tone as secured with an ordinary steam whistle under 100 pounds pressure. There is no discordant, screeching note—each horn is tuned to a musical key. The attachment is simple and the horn easily blown. No need to get out of order like the old style horn. Strong and durable—will last a lifetime.

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MANUFACTURED BY
THE WILLARD STORAGE BATTERY CO.
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24 H.P. **"Torpedo"** CARS

We have some that have been used for a short time at exceptionally low terms

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1905 equipment consists of
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\$\$\$ THEY ARE GOOD AND WORTH MONEY \$\$\$

25 to 50 per cent your battery cost reduced, or a like increase in mileage run by the use of an entirely new device

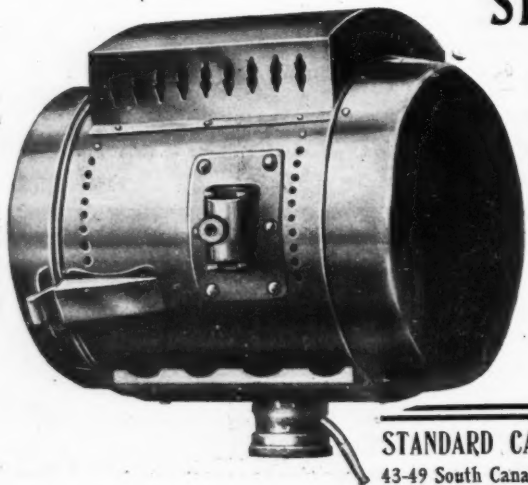
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It pays for itself on the first installation

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Discount to the trade. Money refunded if not satisfactory.

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FULL LINE

Gas Headlights,
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Non-breakable Man-gin Mirror Lens Search-light Projector with swinging bracket. Burns acetylene gas.

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Mirror Lens Searchlight
in connection with our
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gives the brightest and most powerful light ever known.

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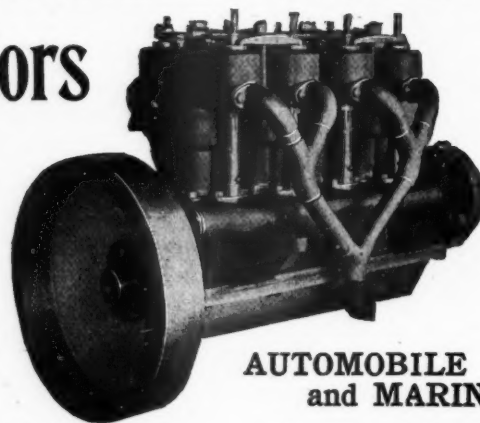
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The "COAT OF MAIL" Tire Protector

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Has overcome the four mechanical weaknesses that make the tire problem the greatest drawback to motoring, namely (1) Puncturability, (2) Skidding, (3) Rim Cutting, (4) Tearing from Wheel, not to mention the general wear and tear. The "COAT OF MAIL" is **absolutely unpuncturable**.

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The strain is carried clear around the tire and put on the felloe and spokes.

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FOLDED FOR TOOL BOX

Usable like this, narrow base,
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ASK YOUR DEALER,
or we deliver in the United States and Canada.

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EITHER SPURS OR BEVELS

Send blue prints for quotations. Accurate
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NELSON'S 37 VARIETIES

For cleaning, stuffing, buffing
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mings. Will not only restore the
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RELIABLE ARTICLE AT A LOW PRICE

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Price, \$3.50.

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Price, \$2.50 and \$3.00

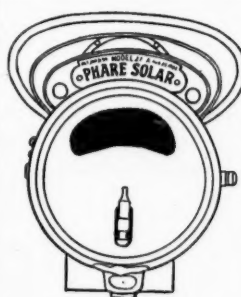
Send for descriptive circulars.

MORE-POWER CO.

Box 175

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BOSTON SHOW, SPACE, 1914



THE GOLD MEDAL AWARD

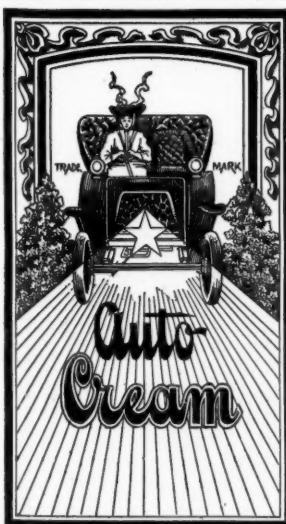
at the St. Louis World's Fair simply con-
firms our repeated statement that best
materials coupled with skill and care in
construction have placed

SOLAR LAMPS

in the first rank. You who have used
them know this, you who have not should
be convinced by this Award. You, Mr.

Dealer, should insist upon them as equipment, for your custom-
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Why Ruin Your Complexion
While Automobiling, Golf-
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Protect your Skin from the Wind and Dust with

Auto Cream

The Vegetable Face Mask

Makes an air-tight invisible coating,
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Softens and whitens the skin. Re-
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583 East 43d Street CHICAGO

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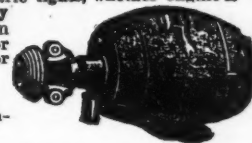
Double Service. The APPLE Automatic Sparker

has a two-fold value to every user of gas power for
automobile, launch or stationary engine.

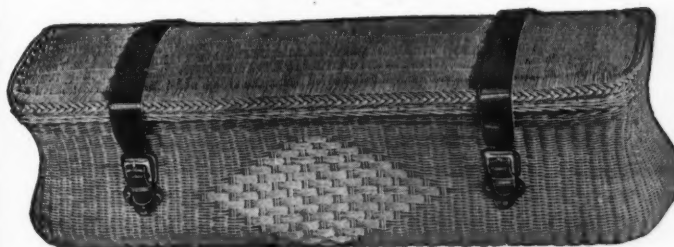
It gives absolutely sure ignition, more speed and
more power. Does away with all belt, battery or
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engine now using batteries. Our new gear-driven
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The Dayton Electrical Mfg. Co.,
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See us at the Auto Shows at Boston and Wash-
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POUNDED REED HAMPERS FOR 1905 SIDE ENTRANCE CARS



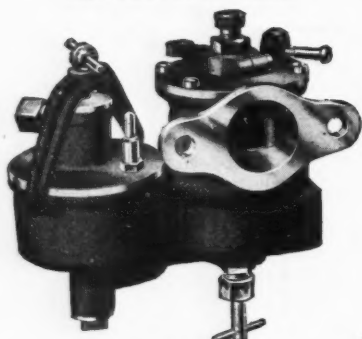
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1905 Catalogue ready.

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Automatic Carbureters FOR Automobiles, Marine and Stationary Engines

Cut shows Holley "Type O" Carburetor to fit different models of Oldsmobiles. It will increase the horse-power of the motor and give a uniform mixture regardless of motor speed. Its economy in the use of gasoline will pay for the carburetor in a short time.

Other types for any size or make of car.

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the finest train on earth, and
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Special on the Iron Mountain,
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Write for free Booklet telling
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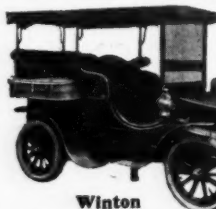
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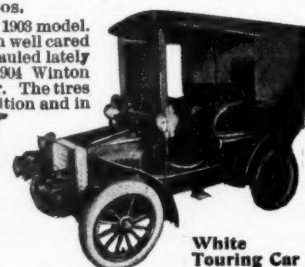


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Fine condition. Tires, etc. in fine order. Tonneau. Fisk tires. Wheel steering. \$875.

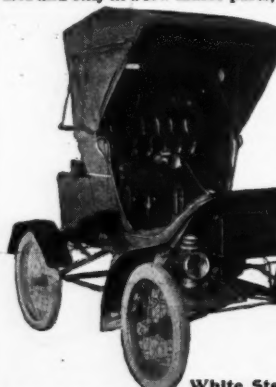


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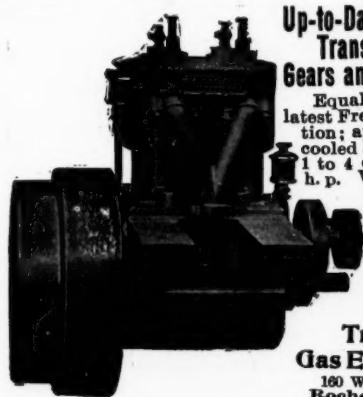
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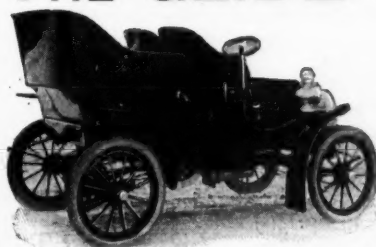
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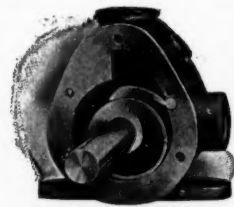
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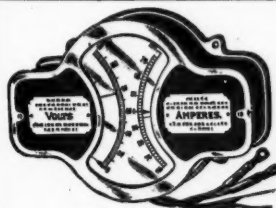


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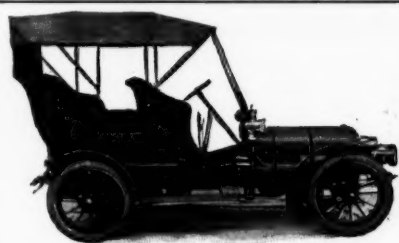


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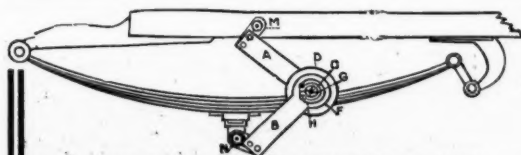
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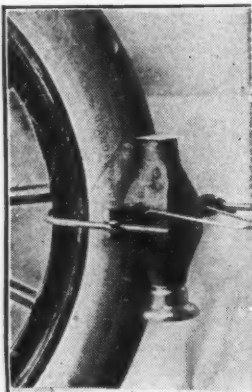


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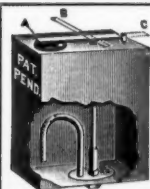
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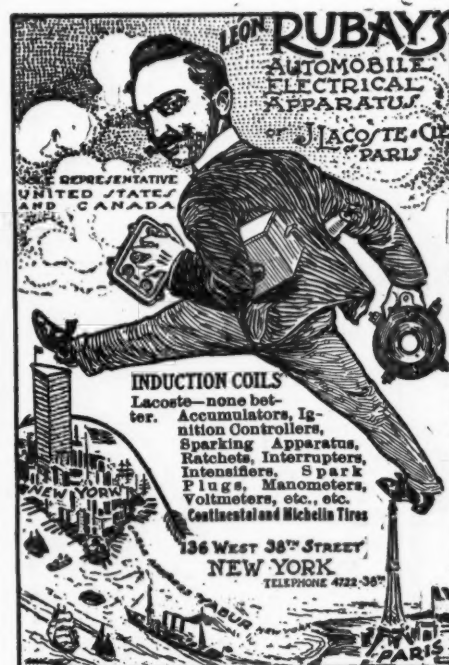
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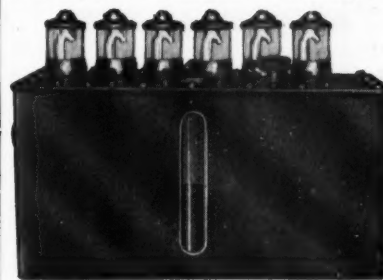
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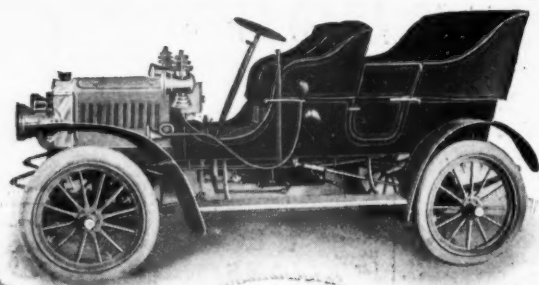
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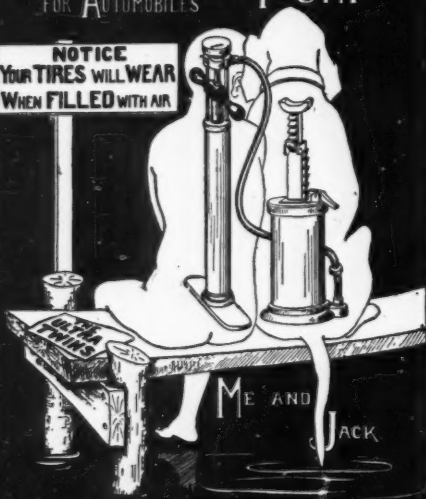
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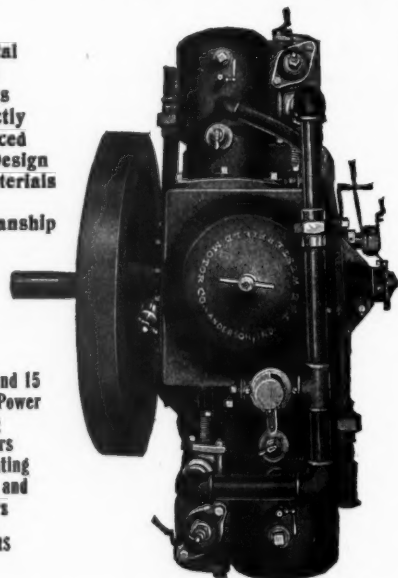
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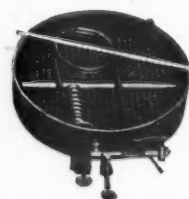
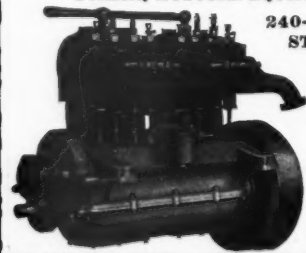
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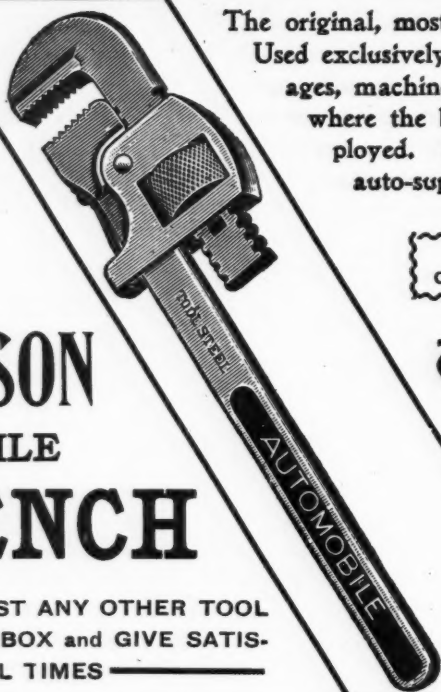
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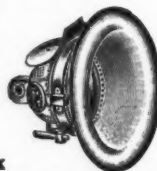
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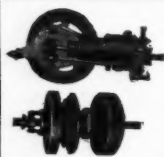
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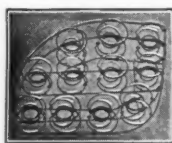
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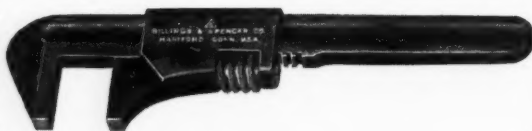
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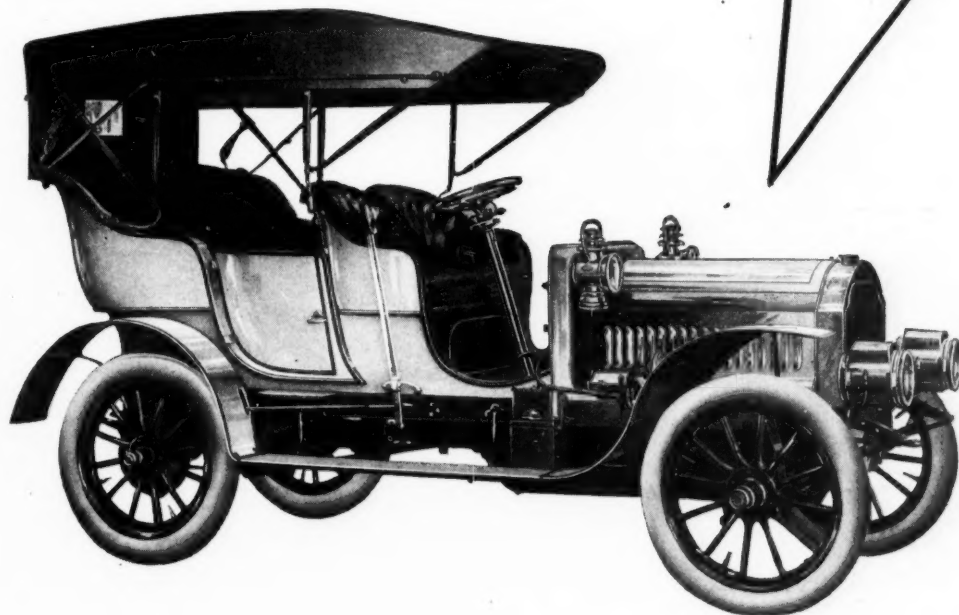
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